

PREDICTORS OF COGNITIVE HARDINESS
IN YOUNG ADULT CHILDREN OF DIVORCE

By

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Abstract of Dissertation Presented to the Graduate School
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**PREDICTORS OF COGNITIVE HARDINESS
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The purpose of this study was to examine the influence of eleven variables in predicting the level of cognitive hardness in young adult children of divorce. Eight of these variables focused on aspects of parent-child interaction reported by young adult children of divorce: (a) the level of nurturance of the mother, (b) the level of nurturance of the father, (c) the level of maternal authoritarianism, (d) the level of maternal permissiveness, (e) the level of maternal authoritarianism, (f) the level of paternal authoritarianism, (g) the level of paternal permissiveness, and (h) the level of paternal authoritarianism. The ninth variable was post-divorce inter-parental conflict. The two remaining variables were gender and age at time of parental divorce. The first two variables were measured by the Parental Nurturance Scale (Buri, 1989); the three parental authority styles for each parent were measured by the Parental Authority Questionnaire (Buri, 1991). The level of post-divorce inter-parental conflict was measured by the Post-

Divorce Parental Conflict Scale (Sonnenblick & Schwartz, 1992). The sample for this study consisted of 110 young adult college students (i.e., ranging in age from 18 to 25 years) who self-identified as having experienced a parental divorce at least 12 months prior to the study.

Correlational analyses were conducted to test the association between each of the independent variables and the dependent variable, cognitive hardiness. Two variables were found to be significantly associated with cognitive hardiness: paternal nurturance ($p<.01$) and maternal nurturance ($p<.05$). Regression analysis was used to evaluate the contribution of the eleven variables in predicting the level of cognitive hardiness as measured by the Cognitive Hardiness Scale (Nowack, 1989). The set of predictor variables explained 27% ($R^2=.266$) of the variance in cognitive hardiness in young adult children of divorce and reached significance ($p<.05$). Statistically significant associations ($p<.05$) were found between cognitive hardiness and two of the paternal variables—paternal nurturance and paternal authoritativeness. Post hoc analyses revealed indirect effects of paternal authoritativeness and paternal authoritarianism on cognitive hardiness. Discussion of the results, implications and limitations of this study were presented, and suggestions for future research were made.

CHAPTER 1 INTRODUCTION

Four of every ten children in the United States reside with a single mother (Bianchi 1995). Marital separation and divorce continue to be the most common trajectory for mothers heading custodial households, and 85% to 90% of children and adolescents whose parents are divorced live with their mothers (Depner & Bray 1993). Researchers studying the effects of divorce on children have tended to focus on the negative consequences of marital dissolution for children and adolescents (Aquilino 1994, Barber & Eccles 1995). Early studies of the consequences of parental divorce have been guided by the assumption that the traditional heterosexual nuclear family is the most effective family structure in which to raise children, and therefore single-parent family households create deviance or deficits. Only a handful of studies explore the positive features of divorced families (Arditti 1999, Arditti & Madden-Derdich 1995, Golby & Bretherton 1999, Hanson 1986, Morrison 1995, Richards & Schmeige 1993).

Most researchers studying children's adjustment to divorce assume that disturbance or dysfunction is a predictable result of parental divorce. Such research focuses on identifying problematic parenting processes that are associated with negative consequences for children of divorce. However, contemporary researchers are suggesting that nontraditional family households may be legitimate and viable contexts for successful parenting. As a result, several recent studies have examined protective

factors in single-parent families created by divorce that contribute to successful adaptation of children of divorce.

Emery and Forehand (1994) suggest that framing the experience of parental divorce within a risk and resilience research perspective is useful for several reasons: (a) divorce is a significant life stressor whose impact on numerous areas of functioning for children (e.g., emotional, psychological, behavioral, and relational) is well documented in the empirical literature; (b) despite the challenges that the experience of parental divorce creates for children and adolescents, most offspring adequately adjust to the changes in their family life; and (c) clinical investigators have tended to erroneously conclude that the competent functioning of a child of divorce serves to mask their emotional response to parental divorce.

In contrast to early studies of divorce that focused on risk factors associated with negative developmental outcomes for children of divorce (e.g., interparental conflict, economic pressure, loss of contact with the noncustodial parent), a focus on resilience seeks to identify protective factors that contribute to successful adaptation and competencies for children of divorce (Masten, Best & Garmezy 1991).

Consistent with a focus on risk and resilience, Kobasa and associates (Kobasa 1979, Kobasa, Maddi & Courington 1981, Maddi & Kobasa 1984) investigated personality traits that function as protective factors in mediating the stress-illness relationship. They identified an aggregate personality construct, hardiness, which seemed to buffer the effects of stressful life events. This construct is conceptualized as multi-dimensional, consisting of three components: an internal sense of control (versus powerlessness), a commitment to work and life activities (versus alienation), and a

perception of life changes and demands as a challenge (versus threat). These optimistic beliefs and tendencies comprise Kobasa's proposed hardy personality style, which has been the focus of numerous studies documenting its protective effect on the stress-strain relationship (Kobasa 1982, Kobasa, Maddi & Kahn 1982, Kobasa, Maddi & Zola 1983, Kobasa & Puccetti 1983).

Hardy individuals are characterized by a transformational coping style that generates adaptive cognitions that reduce the importance or impact of perceived demands, threats, or challenges on well-being (Greene & Nowack 1995). Therefore, a hardy individual would respond to stressful life events with optimistic cognitive appraisals and actions directed toward those events. In a number of studies, Kobasa et al. provided support for the hypothesis that individuals who respond to the challenges of work and life with hardy appraisals are physically healthier (Kobasa 1979, Kobasa et al. 1982, 1983, Kobasa & Puccetti 1983; Maddi & Kobasa 1984).

The need for alternative research perspectives in exploring the consequences of parental divorce is underscored by the lack of attention given to examining differences in family processes within the same family structure. However, several recent studies that explored variations in adaptation within groups of children of divorce reported evidence of healthy growth and favorable adaptation in single-parent families created by divorce (Arditti 1999, Arditti & Madden-Derdich 1995, Golby & Bretherton 1999, Hanson 1986, Morrison 1995, Richards & Schmeige 1993). While the quality of parent-child relationships is significantly associated with positive developmental outcomes for children of divorce (Amato & Booth 1991, Johnson & McNeil 1998, Kurdek & Sinclair 1988), few studies examine the specific interactional processes in single-parent families

that may contribute to successful adjustment of offspring. Furthermore, no studies to date have explored the relationship between specific parent-child processes and the level of hardness in young adult children of divorce.

Therefore, this study sought to contribute to existing research by using a resilience perspective to explore the presence of cognitive hardness in young adults whose parents are divorced. The relative influence of nine relational variables and two demographic variables on the development of cognitive hardness in young adult children of divorce was examined. Relational variables included (a) level of nurturance of the mother, (b) level of nurturance of the father, (c) level of maternal authoritativeness, (d) level of maternal permissiveness, (e) level of maternal authoritarianism, (f) level of paternal authoritativeness, (g) level of paternal permissiveness, (h) level of paternal authoritarianism, and (i) level of interparental conflict post divorce. The two demographic variables that were examined in relation to the development of cognitive hardness were gender and age at time of parental divorce.

Theoretical Framework

To explain the development of cognitive hardness in young adult children of divorce, a theoretical framework is needed that identifies the particular family processes that contribute to the development of cognitive hardness in children whose parents have divorced. Consequently, this study was based on two theoretical perspectives; Maddi and Kobasa's (1984) hardness theory and Weiss' (1979) theory of the structure and functioning of custodial single-parent households created by divorce.

Hardiness theory, as initially formulated by Kobasa (1979), suggests that individuals who remain healthy despite experiencing high levels of stress have a different

personality structure than individuals who become ill under circumstances of high stress.

Kobasa's (1979) theory is based on her empirical research on business executives who appeared to have personality characteristics that enabled them to remain physically healthy in the face of numerous stressful life events. This coping construct, identified by Kobasa as hardiness, is conceptualized as an optimistic orientation comprised of three intertwined personality characteristics: (a) control—the belief that one can influence life events, (b) commitment—the ability to maintain curiosity and feel deeply involved in life activities, and (c) challenge—a view of change as both normal and an opportunity for further individual growth (Kobasa 1979, Kobasa et al.1981, Maddi & Kobasa 1984).

Hardiness theory is undergirded by two major theoretical premises of existential psychology (Kobasa 1979). First of all, personality is actively constructed through a dynamic process. Secondly, despite the stress created by inevitable life changes, individuals possess the ability to approach stressful life events as opportunities for growth. Hardy individuals are characterized by "an amalgam of cognition, emotion, and action aimed not only at survival but also at the enrichment of life through development" (Kobasa, Maddi & Courington 1981, p. 368). Because the beliefs and behavioral tendencies that characterize individuals high in hardiness are useful in coping with stressful events, cognitive hardiness can be conceptualized as a personality strength. The dual process of optimistic cognitive appraisal of potentially stressful life events and decisive interaction with these events so as to reduce or terminate their stressfulness, is also known as "transformational coping" (Kobasa, Maddi & Courington 1981). Maddi and Kobasa (1984) proposed that cognitive hardiness operates through transformational coping to diminish or buffer the negative effects of life stressors.

Kobasa and Maddi (1984) formulated their theory about the development of personality hardiness based on qualitative data from interviews with study participants, the researchers' clinical experience with psychotherapy clients, and research findings from other psychological studies. Data from these various sources suggested that three aspects characterize the early experiences of children who develop hardy personalities: (a) interaction with parents who provide nurturance, acceptance, and encouragement, (b) opportunity to master tasks of moderate difficulty, and (c) encountering change as rich, interesting and developmentally valuable.

According to hardiness theory, children develop general views about themselves and their environments that are influenced by the quality of their parent-child interactions during childhood and adolescence (Maddi & Kobasa 1984). These dispositions are hypothesized to influence the development of an individual's sense of commitment, control, and challenge—the dimensions of cognitive hardiness. First, a sense of commitment to self and the environment is hypothesized to be influenced by "the overall degree to which the interactions children have with their parents are supportive (i.e., provided encouragement and acceptance)" (Maddi & Kobasa 1984, p. 49). According to hardiness theory, children experience parental support when they receive approval, interest, and encouragement in regard to their efforts to satisfy their needs (e.g., safety or love) and potentialities (e.g., mathematical or artistic ability).

These supportive behaviors and attitudes are similar to those conceptualized by Buri (1989) as nurturing. Buri (1989) defines parental nurturance as parental warmth, support, love, approval, attention, and concern. Kobasa and her colleagues posit that the experience of a high degree of parental support encourages children and adolescents to

perceive themselves and the world as interesting and worthwhile. This positive disposition toward self and the world undergirds an individual's sense of commitment to self and one's environment. Conversely, when children's efforts are generally met with parental disapproval, hostility, or neglect, children perceive themselves and their world as empty and worthless. As a result, they lack a sense of commitment (Maddi & Kobasa 1984).

The second component of cognitive hardiness, a sense of control, is hypothesized to develop as a result of children's overall success in mastering moderately difficult tasks in their environment. Possession of a sense of mastery or accomplishment provides opportunities for children to develop a sense that they are able to influence their environment, and create a willingness to act on that sense of control (Maddi & Kobasa 1984). However, if the overall proportion of a child's tasks are too difficult to master and result in failure, a sense of powerlessness over his/her environment develops. Parents have the opportunity to influence the development of a sense of control in their children by providing their children with tasks that are moderate in difficulty and within their ability to master.

The final component of hardiness, a sense of challenge, reflects the degree to which an individual believes that change is normal and an opportunity for personal growth. Kobasa and Maddi (1984) suggest that two conditions are necessary for children to develop a sense of challenge. First of all, children need opportunities to experience change in their environment, whether large, obvious changes (e.g., changes in residences, a parental divorce) or more subtle changes (e.g., varying household tasks, having a variety of hobbies, interacting with siblings and parents who themselves are at different

developmental stages). Secondly, parents need to communicate to their children that change is not only interesting, but also a developmentally valuable opportunity.

The parent-child interactions that Kobasa and Maddi (1984) identified that contribute to the development of hardiness in children are similar to the parenting behaviors described by Baumrind (1971) as authoritative parenting. Based on her longitudinal program of research on families (Family Socialization and Developmental Competence Project [FSP]), Baumrind (1971) formulated three distinct prototypes of parental authority—permissive, authoritative, and authoritarian. She describes permissive parents as relatively noncontrolling in their interactions with their children, and as using a minimum of punishment in disciplining their children. These parents make fewer demands on their children than other parents do, and give their children as much control as possible over their own activities. On the other hand, authoritarian parents use punitive measures to control their children's behavior and enforce the directions given to them. These parents are described as detached, valuing unquestionable obedience, and less warm than other parents. Authoritarian parents discourage verbal give-and-take, and attempt to shape and control their children's behaviors and attitudes whenever possible.

The third parenting prototype identified by Baumrind (1971) is an authoritative parenting style. These parents are described as providing clear and firm direction for their children, and exercising their authority in a warm, rational, flexible, bargaining style that encourages communication with their children. Authoritative parents establish relatively demanding expectations of their children and adolescents in order to provide opportunity for the development of a sense of mastery and accomplishment. In general, this parenting prototype is characterized by high levels of responsiveness and high levels

of demandingness, similar to the characteristics of the family atmosphere identified by Maddi and Kobasa as most conducive to the development of personality hardiness.

Weiss (1979) formulated a theory of the structure and functioning of single-parent households that suggests that these alternative family structures provide opportunity for changes in parental authority and parent-child relationships. He formulated his theory from qualitative data collected in a series of studies conducted within the research program of The Laboratory of Community Psychiatry at Harvard Medical School. Over 200 single parents from diverse educational and occupational backgrounds were interviewed, many of whom participated in multiple interviews over intervals of 6 months to a year. Weiss (1979) also interviewed married couples for comparison purposes, in addition to individual interviews with children and adolescents ranging in age from 6 years old to young adult.

According to Weiss, the loss of a parent from a newly created single-parent custodial household tends to decrease the social distance within the family, and open the normal boundaries between the custodial parent and their children. As a result, communication and disclosure increase, and the parent-child relationship is characterized by greater equality, more frequent interaction, and increased cohesiveness (i.e., heightened intimacy and companionship). However, Weiss (1994) acknowledges that the purported decrease in social distance resulting from the transition from a nuclear family structure to one headed by a single divorced parent is not without its flaws. Family systems theorists have historically expressed concern in regard to potential "boundary violations" or "role reversals" that can occur when the intergenerational

boundaries between children and parents are weakened as a result of the elimination of the spousal system through divorce (Fish, Belsky & Youngblade 1991).

The concept of interpersonal boundaries is associated with the structural concept of hierarchy in a family system (Walters, Carter, Papp & Silverstein 1988). The function of boundaries is to "to protect the autonomy of the family and its subsystems by managing proximity and hierarchy" (Nichols & Schwartz 1998, p. 245). Weiss (1994) identifies several boundary violations that can occur in single-parent custodial households when the spousal system is eliminated and roles between the custodial parent and child may reverse. For example, the custodial parent may (a) look to a child for support, companionship, or sympathy; (b) seek reassurance through their child's reactions for evidence of the validity of the parent's decision to divorce, or (c) share their emotional and financial challenges with their child.

Weiss (1994) also theorizes that the authority structure is more egalitarian than the traditional two-parent family. For example, some single-parent families demonstrate a collaborative style of household management, greater sharing of responsibilities by all family members, and joint participation in decision making. This collaborative style of household management can enhance children's and adolescents' self-esteem by valuing their contribution to the family, broadening their skills and competencies, and facilitating the development of autonomy (Weiss 1979). According to Weiss, redefining the roles and responsibilities of individuals as a result of the transition to a single-parent family creates the opportunity for children and adolescents to become more responsible and independent. However, greater responsibility for household management on the part of

offspring living in single-parent households can result in task overload or role reversal (Hetherington, Cox & Cox 1982).

Weiss (1994) acknowledges that the transition to a more egalitarian style of household management in households headed by a divorced parent can also create problems in management and control. He suggests that, as a result of the increased responsibility that children in single-parent households may have, offspring may feel entitled to more influence in family decision-making. Another potential challenge is children's expectation that their custodial parent observe the same rules that they do, or be included in the distribution of chores. Weiss suggests that single divorced parents are particularly challenged to use an authoritative style of parental authority because of the absence of a second parent to reinforce their decision. The lack of a second parent in the household or guilt about their parenting competency may result in custodial parents assuming a more permissive authority style.

Scope of the Problem

In the United States about half of all first marriages end in divorce, and demographers estimate that this trend will continue (Cherlin 1992). Because remarriage after divorce is common, about one-half of all current marriages include a subsequent marriage for one or both spouses (U.S. Bureau of the Census, 1998, Table 157). Unfortunately, the likelihood of a second marriage ending in dissolution exceeds 60% (Ahrons 1994). Not surprisingly, demographers estimate that one in every six adults will experience two or more divorces (Cherlin 1992).

Needless to say, the prevalence of marital dissolution has implications that extend beyond divorcing spouses. More than half of the nuclear families altered through divorce

include children under the age of 18 (Amato 2000). Estimates of the number of children and adolescents experiencing parental separation and divorce before reaching young adulthood exceed one million individuals (U.S. Bureau of the Census, 1998, Table 160). In other words, about 40% of all young adults will have experienced parental divorce before age 18 (Bumpass 1990), and many of these young adult children of divorce will have experienced multiple marital transitions of their biological parents. Despite the significant proportion of young adults who have experienced parental divorce and subsequent life in a single-parent household, only recently have researchers begun to examine the effects of these transitions on this population. Unfortunately, most research of the consequences of parental divorce uses a deficit perspective.

Research on Young Adult Children of Divorce

Most studies in the past few decades have perpetuated a deficit view of single-parent households created by divorce. Historically, studies of the effects of divorce have focused primarily on the negative consequences for children and adolescents. Recently however, researchers have begun to examine the consequences of parental divorce for young adults. Regardless of the age group of interest (i.e., children, adolescents, young adults), studies examining the effects of parental divorce have generally been guided by one of two research perspectives of divorce; structural or dynamic. Only recently have studies of single-parent families examined protective factors that mediate the experience of parental divorce and positive aspects of single-parent families.

The Structural Research Perspective. Early studies examining the effects of parental divorce were interested in comparing differences in individual outcomes on the basis of family structure (i.e., intact or divorced). As a result, family structure was

conceptualized as the independent variable in studies of the effects of divorce from a structural perspective. The most frequently cited study of the effects of parental divorce from a structural perspective is the longitudinal study of a California cohort of children of divorce by Wallerstein and Kelly (1980). The original sample included 131 children and adolescents from 60 white, middle-class families that had recently separated or filed for divorce. Participants were recruited from a clinical sample, and follow-up data were obtained when these children of divorce reached young adulthood. Regardless of gender, these young adult children of divorce reported difficulty in establishing intimate relationships (Wallerstein & Blakeslee 1989).

In another longitudinal study, Aro and Palosaari (1992) interviewed young adult children of divorce 5 years after the first phase of their research when participants were 16 years old. Regardless of gender, the prevalence of depression among young adult children of divorce was significantly higher than for offspring from intact families. These researchers also found significant differences between participants according to gender and family structure. Women from divorced families were significantly more likely to experience divorce, separation, or abortion themselves, as compared to women from intact families. In addition, females who experienced parental divorce also reported more conflictual relationships with romantic partners, mothers, and friends. Young men whose parents had divorced reported significantly more conflict with authority figures (e.g., teachers) than did sons from nondivorced families.

Similar to longitudinal research on the effects of parental divorce, several cross-sectional studies document interpersonal difficulties of young adult children of divorce, particularly in romantic relationships. In their comparison of 102 female

undergraduate students who were equally grouped on the basis of family structure, Southworth and Schwarz (1987) reported significant differences between the two groups in regard to heterosexual trust. Bolgar, Zweig-Frank, and Paris (1995) recruited a large sample ($n=605$) of college undergraduate students to examine the long-term effects of parental divorce on interpersonal problems. Regardless of gender, young adult children of divorce reported significantly more difficulty being submissive and intimate in interpersonal relationships as compared to peers from intact families. In addition, participants from divorced families described themselves as significantly more controlling than participants whose parents remained married. The findings of this study concur with the results of the research on Ensign, Scherman, and Clark (1998). In their study of 101 college students, young adult children of divorce reported significantly lower levels of intimacy in their romantic relationships than did students from intact families.

Several researchers of the effects of divorce from a structural perspective have used large data sets from national surveys to examine differences in outcomes among young adults on the basis of family structure. Kulka and Weingarten (1979) compared differences on a variety of measures of adult adjustment and psychological functioning for 2264 participants between the ages of 21 and 34 years from divorced and intact families. Unfortunately, only 11% (i.e., 194 participants) were from divorced families ($n=194$). Kulka and Weingarten (1979) found significant, albeit modest, differences between young adult men and women on the basis of family structure. Young men from divorced families reported more concern about an impending nervous breakdown, and greater difficulty in coping with life stressors.

Two longitudinal studies of the consequences of parental divorce used the same data set from the National Survey of Children. Zill, Morrison, and Coiro (1993) found significant differences among young adults between the ages of 18 and 22 years on the basis of family structure. As compared to young adults from intact families, participants from divorced families were at significantly higher risk of having poor relationships with their parents, becoming depressed, developing behavior problems, needing psychological help, and dropping out of high school. Using this same data set for their analyses, Furstenburg and Teitler (1994) found that young adults from divorced families were significantly less likely than peers from intact families to attend college or be employed. Additionally, the pregnancy rate for girls under the age of 19 years was significantly higher for females whose parents were divorced.

Chase-Lansdale, Cherlin, and Kiernan (1995) conducted a longitudinal study in Great Britain on a cohort of 7,966 young adults, 382 of whom had parents who divorced during the study. The researchers reported a 39% increase in the risk of psychopathology for young adults whose parents divorced, and there were no significant differences among participants on the basis of gender.

However, other studies failed to find significant differences among individuals on the basis of family structure. Barkley and Procidano (1989) examined a variety of outcomes (i.e., interpersonal dependency, perceived social support from friends and family, locus of control, dating and assertion skills, and social desirability) among 58 college students from different family structures. Only one significant difference was found; young adult children of divorce scored significantly higher in assertiveness compared to their peers from intact families. Grant, Smith, Sinclair, and Salts (1993)

failed to find evidence of significant differences in college adjustment scores for individuals on the basis of family structure. Lastly, Amato (1988) examined differences in two measures of self-concept (i.e., self-esteem and sense of power) among young adults between the ages of 18 and 34 years from divorced and intact families, and found no evidence of significant differences in self-esteem between participants on the basis of family structure.

The Dynamic Research Perspective. During the 1970s, as a result of the influence of Bertalanffy's General Systems Theory and Bateson's application of cybernetics to family systems, researchers began to widen the lens through which they examined the effects of parental divorce. The dynamic view of divorce conceptualizes marital dissolution as a process that influences family dynamics, relationships, and household management. Unlike the structural perspective, which focuses on differences among young adults as a result of family structure, research from the dynamic paradigm considers the mediating and moderating effect of other extraneous variables in examining the consequences of parental divorce. Most research on the consequences of parental divorce from a dynamic perspective provides evidence that post divorce family relationships and dynamics (e.g., the nature of parent-child relationships, the relationship between former spouses, parenting styles) account for more of the variance between groups of individuals from intact and divorced families than does the event of divorce or of living in a single-parent family created by marital dissolution.

Consensus exists among studies using a dynamic perspective of an inverse relationship between ratings of interparental conflict post divorce and young adults' well-being (Ensign et al. 1998, Garber 1991, Johnson & McNeil 1998, Nelson, Hughes,

Handal, Katz & Searight 1993, Schmidtgall, King, Zarski & Cooper 2000). Garber (1991) investigated the long-term effects of family structure and interparental conflict on the self-esteem of 306 young adults between 18 and 24 years old. Interparental conflict was significantly related to self-esteem, while differences in self-esteem as a result of family structure were insignificant. Nelson, Hughes, Handal, Katz, and Searight (1993) found similar results in their investigation of the relationships among family structure and family conflict and adjustment in young adult college students. A statistically significant relationship between family conflict and adjustment to college was identified. In a sample of 243 young adults between the ages of 17 and 22 years, Neighbors, Forehand, and Bau (1997) found a small but significant relationship between interparental conflict and antisocial behavior in male young adults from divorced families.

Ensign and her colleagues (1998) investigated the relationship of parental conflict and family structure to levels of intimacy and parental attachment in 101 college students. Significant negative correlations were found between interparental conflict and level of intimacy. Findings from this research also revealed an inverse relationship between the level of interparental conflict and the level of closeness in parent-child relationships. Johnson and McNeil (1998) also identified a significant relationship between higher levels of parental conflict post divorce and lower levels of intimacy and individuation between college students and their divorced parents. In their study of 52 female undergraduate students from divorced families, Schmidtgall et al. (2000) found a significant relationship between interparental conflict and depressive symptomatology. Contrary to previous studies, family structure did not significantly affect the level of depression reported in this young adult sample.

Support for a mediating effect of parent-child relationships and parenting style on adjustment of offspring to parental divorce is found in several studies from a dynamic research perspective. Regardless of gender, custodial parents who demonstrate parenting behaviors characterized by high levels of nurturance, communication, and an authoritative style are associated with positive adjustment of offspring (Demo 1992, Hetherington & Clingermanpeel 1992, Steinberg, Mounts, Lamborn & Dornbusch 1991). Neighbors et al. (1997) investigated the mediating role of relations with parents in young adult children of divorce, and found evidence that the presence of close and supportive relationships with parents post divorce is associated with significantly lower levels of psychological distress, regardless of gender. Weiner, Harlow, Adams, and Grebstain (1995) found similar results in their research on predictors of psychological adjustment of college students from families of divorce. Findings from their study demonstrate that paternal indifference, lack of paternal caring, and maternal indifference were significant predictors of college adjustment for young adult children of divorce.

Open and direct communication, or expressiveness, was found to be the most significant family variable post divorce contributing to developmental task attainment in young adult children of divorce (Johnson and McNeil 1998). Evans and Bloom (1996) also found evidence of a significant moderating effect of parent-child relations after divorce. In their study of 140 college undergraduates from divorced families, the quality of the mother-child relationship and level of authoritativeness observed in both parents were found to significantly moderate the effects of parental divorce for young adults.

The Resilience Research Perspective. As an alternative to the focus of earlier studies of divorce on the risk factors that contribute to negative developmental outcomes

for children of divorce, contemporary researchers have begun to examine protective factors that contribute to successful adaptation and positive outcomes for children of divorce (Masten, Best & Garmezy 1991). While few studies in the divorce literature examined young adults' experience of parental divorce from a resilience research perspective, researchers have identified protective factors that contribute to positive outcomes for children in a context of adversity (e.g., poverty, parental mental illness, chronic illness). Protective variables identified in the resilience literature are categorized into three groups: individual (e.g., temperament, internal locus of control, age, self-efficacy), family (e.g., parental nurturance, quality of parent-child relationship, parental harmony, parental authority), and extrafamilial (e.g., social support) by Garmezy (1985, 1991).

Only six studies were located that examined strengths or competencies in single-parent families of divorce (Arditti 1999, Arditti & Madden-Derdich 1995, Golby & Bretherton 1999, Hanson 1986, Morrison 1995, Richards & Schmeige 1993). The findings of these studies support the viability and strengths of these nontraditional family structures. However, only one study examined specific mother-child interactions that contribute to the quality of the parent-child relationship in the context of a single-parent household headed by a divorced mother. Arditti (1999) found support for the benefits of maternal proximity, involvement, and support for young adult children of divorce. Other positive characteristics of relationships between custodial mothers and their children identified in this study include a greater sense of equality, more frequent interaction, increased discussion, and greater intimacy and companionship. However, no studies to

date explored the development of personality strengths in individuals who experienced parental divorce.

Gender and Cognitive Hardiness

Hardiness research has been criticized for its reliance on studies that examine this personality strength in only one gender (Lambert & Lambert 1999, Shepperd & Kashani 1991). Consensus exists among studies concerning of significant relationship between gender and the level of cognitive hardiness. In her research on cognitive hardiness in a college-age population, Perrah (1990) found no significant relationship between gender and level of cognitive hardiness. Several other studies also failed to find evidence of a significant relationship between gender and level of cognitive hardiness (Greene & Nowack 1995, Nowack 1985, 1989, 1990, 1991). Only one study was located that reported a significant difference between gender and level of cognitive hardiness. In his investigation of the effects of coping style and cognitive hardiness on physical and psychological health status among 194 professional employees, Nowack (1988) found that the level of cognitive hardiness in women working full-time was significantly less than that of their male colleagues. However, later studies by Nowack (1985, 1990, 1991) on the cognitive hardiness of professional employees failed to support this finding (Greene & Nowack 1995).

Relational Variables and the Development of Hardiness

No studies were located that investigated the relationship between parent-child interactions and the development of cognitive hardiness that Maddi and Kobasa (1984) propose in their theory of hardiness. Most studies of cognitive hardiness examine the moderating influence of this personality characteristic in coping with stress. A plethora

of studies provide empirical evidence of the buffering effect of cognitive hardiness on physical illness and psychological distress.

Maddi and Kobasa (1984) relied on interviews with business executives in their study, their clinical experience with psychotherapy clients, and research findings of other psychological studies to suggest how hardiness develops in individuals. Their theory of the development of hardiness identifies qualitative aspects of parent-child interactions that promote the development of this personality strength. These parenting behaviors are similar to the constructs of parental nurturance (Buri 1989) and an authoritative parenting style (Baumrind 1971). However, Maddi and Kobasa (1984) exclude the potential influence of the quality of the relationship between parents on the development of cognitive hardiness in offspring. Regardless of family structure, no studies were located that examined the influence of these family relational variables (i.e., parental nurturance, parental authority, interparental conflict) on the development of cognitive hardiness in individuals.

Need for the Study

Researchers have begun to examine variations within groups of individuals who have experienced parental divorce. These studies provide evidence of healthy growth and favorable adaptation in many post divorce families (Arditti 1999, Arditti & Madden-Derdich 1995, Golby & Bretherton 1999, Hanson 1986, Morrison 1995, Richards & Schmeige 1993). Despite evidence that the quality of post divorce family functioning is the most salient predictor of individual outcomes (Amato & Booth 1991, Johnson & McNeil 1998, Kurdek & Sinclair 1988), few studies examine the specific family processes that contribute to adaptive family functioning after divorce. Greater insight

and understanding is needed to identify the family interactional and contextual variables that contribute to positive outcomes for young adults who have experienced the divorce of their parents. Cognitive hardiness, the tendency to optimistically appraise potentially stressful events (Kobasa 1979), is conceptualized as a personality strength whose development is influenced by family processes. This study explored parent-child and family process influences on the development of cognitive hardiness in young adult children of divorce. Eleven potential influences were examined: gender, age at time of biological parents' divorce, perceived maternal nurturance, perceived paternal nurturance, maternal authoritativeness, maternal permissiveness, maternal authoritarianism, paternal authoritativeness, paternal permissiveness, paternal authoritarianism, and post divorce interparental conflict.

Unfortunately, many early studies of the effects of parental divorce on young adults' well-being from the structural and dynamic research perspectives have been plagued by methodological weaknesses that compromise the generalizability of findings: control group research design, exclusion of salient extraneous variables, sampling issues, measurement issues, overreliance on cross-sectional research, and statistical analyses.

Regardless of the research perspective (i.e., structural or dynamic), the research design most often used to investigate the consequences of parental divorce is the comparison group design. This between-groups design compares individuals from intact two-parent families who have not experienced divorce, and those from families whose structure has changed as a result of marital dissolution. Use of the comparison group research design is problematic in comparing individuals solely on the basis of family structure for several reasons. First of all, a guiding assumption is that the only difference

between individuals is the experience of parental divorce. Therefore, between-group differences may be misattributed to family structure, as opposed to other potential explanations for differences in outcomes. While control strategies may increase the likelihood that differences between groups are accurately attributed to family structure, it is virtually impossible to control for all potentially confounding variables.

Researchers' attempts to match participants in different groups in regard to various characteristics (e.g., socioeconomic status, gender, maternal employment), may inadvertently lead to unrepresentative sampling (Blechman 1982). Another weakness of the comparison group research design is the assumption that the effects of divorce are constant across families and over time (Stewart, Copeland, Chester, Malley & Barenbaum 1997). Finally, comparison group designs often fail to examine important within-group differences, as both intact and binuclear families are assumed to be homogeneous in nature.

Salient extraneous variables (e.g., economic hardship, exposure to interparental conflict, parental education, social class) are often excluded in research designs from the structural perspective of divorce. Exclusion of demographic and contextual factors may lead to the erroneous conclusion that significant differences between groups of individuals are caused by family structure, as opposed to other extraneous variables (Acock & Demo 1994, Blechman 1982, Ford-Gilboe & Campbell 1996). Overall, studies of the consequences of parental divorce from a dynamic perspective are characterized by more sophisticated research designs that control for the confounding influence of extraneous process variables (i.e., interparental conflict, quality of parent-child relationship, loss of quantity and quality of contact with noncustodial parent). However,

similar to the structural view of divorce, most studies from a dynamic perspective fail to control or account for the variance in outcomes associated with social and cultural factors.

Significant sampling issues limit the generalizability of findings of most research studies from both the structural and dynamic perspectives. In general, research on the effects of parental divorce from a structural perspective is characterized by: (a) small clinical samples of middle-class, white participants, and (b) use of research data sets collected from large national surveys initially designed to obtain and analyze demographic data for purposes unrelated to the experience of parental divorce.

Samples are described as "clinical" when researchers recruit participants from individuals or families seeking mental health services. Sample bias may result when a clinical population is used by researchers to examine the effect of divorce as these individuals may not be representative of the larger, nonclinical population. In addition, participants recruited from a clinical setting may exhibit more problematic behavior. Clinical samples can create problem with regard to the interpretation of data, and limit generalizability to the larger non-clinical population (Emery 1988). Amato and Keith (1991a, 1991b) observed that the effect sizes for both psychological well being and behavior/conduct outcomes were significantly larger for studies of individual outcomes utilizing clinical samples. In addition, they reported significant differences in the mean effect sizes between the clinical and non-clinical samples.

Other researchers have relied on large-scale national surveys for their divorce-related research. Unfortunately, these data sets are also plagued by methodological weaknesses: (a) theoretically significant variables are not measured, or

are poorly operationalized since the data was originally collected for another purpose; (b) important control variables are not present in the research design, or (c) data is reanalyzed for a purpose different than the intent of the original collection.

Unlike the heavy reliance on clinical samples characterizing studies from the structural perspective, most studies using utilizing a dynamic perspective rely on convenience samples comprised of volunteers. Amato and Keith (1991a, 1991b) suggest that reliance on convenience samples may also create bias. Their review of the divorce literature provides evidence that research based on convenience samples produces stronger effect sizes than studies using other types of samples. However, convenience samples, when selected to fit carefully constructed categories, are more desirable when researchers intend to generalize to a specific population (Stevenson & Black 1996).

Few studies from either the structural or dynamic research perspectives use multiple means or sources of measurement, and often use invalid or unreliable measurement instruments (Emery 1988, Guttman 1993). Rater bias may compromise the validity and reliability of research on the consequences of divorce for children and adolescents. Raters can be influenced by knowledge of the family structure of the individual that they are evaluating (e.g., the child's teacher), or are related to the subject (e.g., a mother). Both scenarios potentially impair the ability of the rater to be objective (Emery 1988). Research suggests that teachers have been found to favor children from intact families and exaggerate problems of children from divorced families (Blechman 1982, Santrock & Tracy 1978). An additional measurement issue that plagues studies from a dynamic perspective is the operationalization of process variables, and the validity and reliability of measurement instruments are common weakness of this research

paradigm. For example, one-fourth of the studies reviewed by Amato and Keith (1991b) used a single-item measure to examine the quality of mother-child and father-child relationships post divorce, potentially reducing the validity and reliability of these findings.

Another limitation of studies of the effects of parental divorce from both the structural and dynamic perspectives is the prevalence of cross-sectional research designs. Weaknesses of this research design include limitations in regard to causal inference; and difficulty interpreting findings, particularly in regard to detecting developmental processes as opposed to effects of divorce (Demo & Acock 1988, Emery 1988). Most individuals adjust to parental divorce within the first several years, and passage of time has been shown to explain a greater proportion of the variance in the correlation between divorce and child outcomes than does the event of divorce (Hetherington 1989). However, cross-sectional designs may fail to consider the confounding affects of temporal variables. Additionally, this type of research design does not allow for examination of causal direction or development effects. Some characteristics of children and adolescents that are considered consequences of divorce may in fact be present before marital dissolution (Cherlin, Furstenberg, Chase-Lansdale, Kiernan, Robins, Morrison & Teitler 1991). In order for researchers to determine whether differences between groups of individuals are attributable to preexisting differences or parental divorce, longitudinal studies are needed.

A final problem of both structural and dynamic studies of the effects of divorce is in the area of statistical analyses. Most studies of the consequences of parental divorce, particularly from a structural perspective, use correlational analysis. Unfortunately,

researchers have often erroneously interpreted high correlations to imply a causal relationship between family structure and the outcome variable being measured. Correlation coefficients do not provide sufficient information to imply causality, as the relationship may be due to a third factor that is not included in the research design (Huck, Cormier & Bounds 1974). Few studies from the structural perspective use sophisticated analyses (e.g., multiple regression, analysis of covariance) to study the independent causal effect of family structure. Moreover, use of small sample sizes may contribute to the lack of more statistically sophisticated data analysis. However, however several dynamic studies were located that used more sophisticated analyses and research designs that attempt to control for many of the extraneous variables that may confound outcome variables. Unfortunately, similar to studies of the effects of parental divorce from a structural perspective, most research from the dynamic perspective is plagued by sampling problems that reduce the generalizability of findings.

The past decade has witnessed a shift from the modernist research focus on deficits, psychopathology, and mental illness to examining positive or adaptive aspects of individual's personality and behavior (Seligman & Csikszentmihalyi 2000). Concepts such as resilience, positive psychology, hardiness, and optimism are becoming more common in the research literature from a variety of disciplines. Therefore, use of a strengths-based paradigm to examine the development of cognitive hardiness in young adult children of divorce provides a postmodern lens through which "those relationship patterns, interpersonal skills and competencies, and social and psychological characteristics that create a positive family identity . . . and encourage the development of the potential of the family group and individual family members" (Williams, Lingren,

Rowe, Van Zandt & Stinnett 1985, preface) can be explored. The benefits of being socialized in a single-parent household headed by a divorced mother have not been adequately investigated, as most researchers have been guided by problem-focused hypotheses that reflect the androcentric bias of modernist research. Barber and Eccles (1992) emphasize "the need for researchers to focus on normal development in different family types and on the processes that both negatively and positively influence adjustment to family transitions" (p. 122).

The need for researchers to explore the effects of parental divorce for young adults from a strengths-based perspective is underscored by the dearth of studies through this postmodern lens. While four studies were located that examined the strengths of single-parent families created by divorce (Arditti 1999, Ford-Gilboe 2000, Golby & Bretherton 1999, Morrison 1995, Richards & Schmeige 1993), none of these explored individual strengths for offspring who experienced the divorce of their parents. With the exception of Arditti's (1999) research, all of these studies of strengths of single-parent families created by divorce investigated the experience of living in this nontraditional family structure from the perspective of the custodial parent. A strength of Arditti's (1999) research is her use of the perspective of a young adult child of divorce to investigate the strengths of mother-child relationships in single-parent families created by divorce.

Purpose

The purpose of this study was to examine the influence of eleven variables in predicting the level of cognitive hardiness in young adult children of divorce. Eight of these variables focused on aspects of parent-child interaction reported by the young adult

child of divorce: (a) level of nurturance of the mother, (b) level of nurturance of the father, (c) level of maternal authoritativeness, (d) level of maternal permissiveness, (e) level of maternal authoritarianism, (f) level of paternal authoritativeness, and (g) level of paternal permissiveness. The ninth variable was post divorce interparental conflict. The two remaining variables were gender and age at time of parental divorce. The sample for this study consisted of young adult college students (i.e., ranging in age from 18 to 25 years) attending a junior college or 4-year university who self-identified as having experienced a parental divorce at least 12 months before the study.

Research Questions

The following research questions were addressed in this study:

1. What is the relationship between gender and the level of cognitive hardiness reported by young adult children of divorce?
2. What is the relationship between age and time of parental divorce and the level of cognitive hardiness reported by young adult children of divorce?
3. What is the relationship between the level of nurturance characterizing the mother-child and father-child relationship and the level of cognitive hardiness reported by young adult children of divorce?
4. What is the relationship between the type of parenting style of the mother or father and the level of cognitive hardiness reported by young adult children of divorce?
5. What is the relationship between the extent of parental conflict post divorce and the level of cognitive hardiness reported by young adult children of divorce?

6. To what extent do these parent-child and parent-parent relationship variables contribute to predicting the level of cognitive hardiness reported by young adult children of divorce?

Definition of Terms

Age at time of parental divorce. The chronological age of an individual when their biological parents divorced.

Authoritarian parenting style. Based on Baumrind's (1971) prototypes of parental authority, authoritarian parents use punitive measures to control their children's behavior and enforce the directions given to them. These parents are described as detached, valuing unquestionable obedience, and less warm than other parents. Authoritarian parents discourage verbal give-and-take, and attempt to shape and control their children's behaviors and attitudes whenever possible.

Authoritative parenting style. Based on Baumrind's (1971) prototypes of parental authority, authoritative parents are described as providing clear and firm direction for their children. They tend to exercise their authority in a warm, rational, flexible, bargaining style that encourages communication with their children.

Binuclear family. A family that spans two households, each headed by one parent. The concept of the binuclear family structure was developed by Ahrons (1979) to describe the creation of two family households when parents divorce. The former nuclear family structure that consisted of one nucleus (i.e., one shared household between two parents) splits into two nuclei (i.e., two separate households), each of which is headed by one parent from the former nucleus.

Cognitive hardiness. An optimistic, transformational coping style that generates adaptive cognitions that reduce the importance or impact of perceived demands, threats, or challenges on well being (Greene & Nowack1995).

Divorce. The legal dissolution of a marriage (Webster, 1995).

Interparental conflict post divorce. A multidimensional phenomenon that encompasses factors such as frequency, style, content, and intensity of disharmony between an individual's parents after their marriage has been dissolved through a divorce.

Nuclear family. This concept was developed by Ahrons (1979) to describe intact families that have one nucleus or one shared household headed by two parents.

Parental authority. Based on Baumrind's (1971) three distinct prototypes of parental authority—permissive, authoritarian, and authoritative parenting.

Parental nurturance. Parental behaviors directed towards children with the intent of providing physical or psychological nourishment. Examples of parental nurturance include love, warmth, acceptance, approval, affection, support, and concern communicated to children (Buri, Murphrey, Richtmeier & Komar 1992).

Permissive parenting style. Based on Baumrind's (1971) prototypes of parental authority, permissive parents are relatively non-controlling in their interactions with their children, and use a minimum of punishment in disciplining their children. These parents make fewer demands on their children than other parents, and give their children as much control as possible over their own activities.

Single-parent family created by divorce. A family structure consisting of one parent who is divorced and the children from the marriage that ended in divorce, in addition to other children from the parent's previous marriages or relationships.

Young adult child of divorce. Individuals between the ages of 18 and 25 years whose biological parents have ended their marital relationship in divorce. Carter & McGoldrick (1998) conceptualize the young adult stage of their family life cycle model to include individuals between the ages of 18 and 25 years.

Organization of the Study

Chapter 2 reviews the related literature. Chapter 3 contains the research methodology and includes: a statement of the purpose of the study, hypotheses, description of relevant variables, data analyses, description of the population, subjects, sampling procedures, data collection, and instrumentation. Chapter 4 contains the results of the statistical analyses of the data. Chapter 5 discusses the results of the analyses, the implications for theory and practice, the limitations of the study, and suggestions for future research.

CHAPTER 2 REVIEW OF THE LITERATURE

Introduction

Young adult children of divorce have not been studied extensively by social scientists, particularly from a competence-based, strength-oriented perspective. In this chapter, the literature examining family process variables that contribute to the development of resilience in children and adolescents is reviewed. In addition, literature on parent-child and parent-parent interactional variables that influence the adjustment of offspring to parental divorce is discussed. Lastly, the literature on the contribution of gender and age at the time of parental divorce to children's adjustment is examined.

Most early studies of family functioning have been guided by a deficit lens, particularly those that examined outcomes for children and adolescents whose parents have divorced. Similar to the underlying assumption guiding researchers from the traditional medical model, early family researchers conceptualized healthy family functioning by the absence of problems or symptoms. As a result, family processes that contributed to positive outcomes for individual family members were seldom the focus of earlier research. In addition, researchers often conceptualized individual or family problems as symptoms of family dysfunction, instead of attempts to cope with normal stresses or disruptive life changes (Minuchin 1974).

In contrast, contemporary family researchers have been interested in positive or adaptive aspects of individual and family functioning, particularly in a context of

adversity. Research on resilience examines individuals who have successfully adapted to stressful life events and family circumstances including (a) severe natural disasters (Garmezy & Rutter 1985), (b) poverty (Werner & Smith 1982, 2001, Egeland, Carlson & Sroufe 1993), (c) and combinations of high-risk factors (e.g., parental psychopathology, paternal criminality). Surprisingly, few studies frame the experience of parental divorce within a resilience perspective (Emery & Forehand 1994), despite the tendency of researchers to conceptualize divorce as a major life stressor that can adversely affect developmental outcomes for children and adolescents.

Family factors are often considered by researchers using a risk paradigm to study the adaptation of individuals and families in a context of adversity. Researchers have discovered that the organization of a family and interactions among family members can function as either protective or risk mechanisms. Most studies in the divorce literature focus on risk factors that adversely affect the adjustment of children to parental divorce (e.g., post divorce interparental conflict, economic deprivation, lack of contact with the noncustodial parent). In contrast, framing the experience of parental divorce within a resilience research perspective shifts attention to the protective factors that may contribute to positive developmental outcomes in children of divorce (Masten et al. 1991, Walsh 1998).

Research on Resilient Individuals

Luthar, Cicicetti, and Becker (2000) define the phenomenon of resilience as those dynamic processes that contribute to successful adaptation within a context of significant adversity. Psychosocial resilience is conceptualized as an individual's capacity to not only withstand adversity, but more importantly, to emerge strengthened and more

competent (Egeland et al. 1993, Walsh 1998). Researchers tend to operationalize resilience as the positive end of the distribution of individual differences in developmental outcomes in response to stress and adversity (Rutter 1987). The capacity for resilience is viewed as a personality strength that develops over time, as opposed to an innate childhood trait (Egeland et al. 1993). Researchers suggest that resilience results from an interactional process between nature and nurture in the form of nurturing relationships (Walsh 1998, Werner 1993). Specific measures used to conceptualize resilience vary among studies (e.g., social competence, self-esteem, self-efficacy).

Understanding the development of resilience and the processes that protect children and adolescents from the adverse psychosocial risks has been the focus of research from a variety of disciplines (e.g., education, developmental psychology, sociology, and medical) (Werner & Smith 2001). Not surprisingly, parallel constructs have emerged in the resilience literature that describe characteristics from these different disciplines. As a result, resilient individuals are characterized by a common set of characteristics: (a) sense of coherence (Antonovsky 1979), (b) learned optimism (Seligman 1990, Hokoda & Fincham 1995, Garber & Flynn 1998), and (c) hardiness (Kobasa et al. 1982, Kobasa 1979). These constructs have been the focus of researchers examining the buffering effect of personality strengths on the stress-illness relationship.

Wolin and Wolin (1993) developed the Challenge Model to investigate the long-term consequences for adult children of alcoholics. They explored characteristics of resilient individuals who grew up in a context of parental alcoholism, and yet were leading satisfying and productive lives as adults. Drawing on qualitative data from interviews with 25 "resilient survivors", Wolin and Wolin (1993) identified a set of seven

personality strengths that serve to protect a child's sense of self in a context of adversity. These strengths include insight, morality, independence, relationships, initiative, creativity, and humor.

Research on protective factors. Garmenzy (1991) classified three levels of protective factors that contribute to the development of resilience in children and adolescents: (a) individual factors (e.g., temperament, self-efficacy, internal locus of control), (b) familial factors (i.e., warm, supportive parent; good parent-child relationship, parental harmony), and (c) extrafamilial support factors. Consensus exists in the literature of the significant influence of parent-child interactions on the development of resilience in children. In their landmark research project, the Kauai Longitudinal Study, Werner and Smith (1992) followed a cohort of 614 children born in Kauai in 1955 through age 40. This study was designed to examine the impact of biological and psychosocial risk factors, stressful life events, and protective factors on the development of children.

Werner and Smith (1992) found that the emotional support and positive interactions provided by mothers in this study contributed significantly to the development of resilience in this cohort of individuals, despite the tremendous adversity that many of these children faced. Regardless of a child's gender, maternal nurturance was positively related to the quality of adaptation and several other positive outcomes (i.e., health status, competencies, self-efficacy) that persisted into middle adulthood. However, findings from Werner and Smith's research (1982, 2001) support significant gender differences that remained constant throughout their longitudinal research.

Overall, girls were more resilient than boys when facing a context of major biological and psychosocial risks.

In another longitudinal study, Egeland and his associates (1993) examined the development of resilience in children born to 267 high-risk mothers whose income fell below the poverty line. Unlike most studies that assess resilience using specific outcomes (e.g., social competence), Egeland and his colleagues focused on identifying salient patterns of behavior in children over time. Collection of data began in the third trimester of pregnancy with mothers considered to be high-risk, and continued until the child reached the age of 18 years. Assessments of the child's adaptation or resilience involved multiple situations and procedures, and multiple sources of information (e.g., teacher or parent observation). Consistent with the literature on resilience, a positive association was found between the presence of nurturing and supportive parent-child interactions and the development of resilience in children.

Rutter and his colleagues examined epidemiological data derived from studies conducted in the Isle of Wright and inner London (Rutter, Cox, Tupling, Berger & Yule 1975, Rutter, Yule, Quinton, Rowlands, Yule & Berger 1975). One of these studies, a four-year longitudinal study of 10 year old children, examined the protective processes that contribute to the development of resilience in children in contexts of high-risk. Circumstances considered as high risk by Rutter and his colleagues included: (a) severe marital discord, (b) low social status, (c) overcrowding or large family size, (d) paternal criminality, (e) maternal psychiatric disorder, and (f) admission into the care of the local authority.

Rutter and his associates used a subsample of children (n=103) from this study who had at least one parent who had been in psychiatric care. In addition, the child's home environment was characterized by a high level of interparental conflict. Children in this subsample who identified a parent-child relationship characterized by the presence of high warmth and the absence of criticism (i.e., a good relationship with a parent) were compared to children in the same sample who lacked a good relationship with either parent. Rutter and his colleagues found a significant protective effect of a good relationship with one parent in a context of adversity. For example, children who reported having a good relationship with one parent, despite having a mentally ill parent and experiencing a high level of interparental conflict, were significantly less likely to be diagnosed with a conduct disorder.

Wyman, Cowen, Work, and Parker (1991) used data from the Rochester Child Resilience Project (RCRP) to explore resilience in a sample of highly stressed urban children 10 to 12 years old. Children who experienced four or more stressful life events (e.g., death of a close family member) or circumstances (e.g., having a close family member with a substance abuse problem) were assigned to one of two subgroups of participants: stress-resilient (n=40) or stress-affected (n=37). Three screening measures were used to establish group assignment status: (a) parents' assessment of the child's adjustment in several domains (e.g., peer relationships and independence), (b) current teacher's global rating of the child's adjustment in five categories relative to same sex peers, and (c) previous teacher's global rating of the child's adjustment in the same five categories relative to same sex peers.

Wyman and his associates (1991) used a battery of measures to assess developmental outcomes associated with resilience in children (i.e., self-rated adjustment, perceived competence, empathy, interpersonal problem-solving skills, adaptive coping strategies, and realistic control attributions). Findings from this study provided evidence of two significant protective parenting factors associated with resilient outcomes among highly stressed children. First, a parent-child relationship that was characterized by a high level of nurturance and closeness significantly contributed to resilient child outcomes in contexts of severe stress. Additionally, children whose parents demonstrated positive, consistent discipline practices scored significantly higher on outcome measures associated with resilience.

Research on Young Adult Children of Divorce

Early research on the effects of divorce focused primarily on identifying the negative emotional, psychological, and behavioral outcomes for children and adolescents. Recently however, researchers have begun to examine how the experience of parental divorce affects individuals in young adulthood. In addition, studies have begun to focus on the response variation across individuals whose parents divorce (Rutter 1987, Hetherington 1991). This shift in focus represents a departure from earlier studies of divorce that examined groups of individuals who differed on family structure (i.e., divorced or intact), thereby assuming the homogeneity of groups of individuals from the same family structure. Moreover, use of a resilience paradigm to examine the consequences of parental divorce allows individual responses to be conceptualized along a continuum ranging from positive outcomes (e.g., enhanced competence, hardiness) to

clinical levels of problem behaviors or emotional difficulties (e.g., conduct disorders, depression) (Hetherington 1991a).

Finally, framing the experience of parental divorce within a resilience paradigm suggests that the experience of divorce is not a discrete event, but instead a process of transitions in family organization, relationships, and interactions (Hetherington, Law & O'Connor 1993). This conceptualization is consistent with the context of adversity examined in the resilience literature, which focuses on individual adaptation to chronic stressors, life challenges, and trauma. Similar to the mechanisms that enhance or reduce the likelihood that an individual will become resilient in the process of coping with adversity, adjustment to parental divorce is mediated by protective and risk factors when viewed within a resilience perspective.

Consensus exists in the divorce literature that family interactional variables (e.g., parent-child relationship, interparental conflict) are more salient predictors of outcomes for children and adolescents than family structure (i.e., divorced or intact) (Acock & Demo 1994, Hess & Camera 1979). Researchers examining the consequences of parental divorce for children have identified protective and risk mechanisms contributing to individual adjustment that parallel those reported in the resilience literature. The nature of the parent-child relationship exercised by custodial parents has been identified as a protective factor in the adjustment of offspring to parental divorce in the divorce literature (Demo 1992, Hetherington & Clingempeel 1992, Steinberg et al. 1991, Wallerstein & Corbin 1989). In contrast, interparental conflict has been identified as a risk factor that significantly contributes to child and adolescent outcomes in both intact

and divorced families (Amato & Keith 1991b, Barber & Eccles 1992, Cherlin et al. 1991, Grych & Fincham 1990).

Research on organizational processes. Weiss (1979) formulated a theory of the organizational processes in single-parent households based on the qualitative data that he collected in a series of studies conducted within the research program at the Laboratory of Community Psychiatry at Harvard Medical School. Over 200 single parents from diverse educational and occupational backgrounds were interviewed, many of whom participated in multiple interviews over intervals of 6 months to a year.

According to Weiss (1979), the transition to a family structure headed by a custodial parent tends to decrease social distance within the family, thereby creating less patriarchal boundaries in the parent-child relationship. Findings from Weiss' research suggest that parent-child relationships in single-parent households are characterized by greater equality, more frequent interaction, and increased cohesiveness (i.e., heightened intimacy and companionship). These findings are supported by the Arditti's (1999) research on mother-child relationships from the perspective of 58 young adult children of divorce. Themes of "closeness and equality" emerged from the qualitative data that Arditti (1999) collected to describe mother-child relationships in mother-custody families.

Weiss (1979) also suggests that the authority structure in single-parent families created by divorce tends to be more egalitarian as compared to the traditional hierarchical parental coalition characterizing many nuclear families. Families headed by a custodial parent are often characterized by a collaborative style of household management, greater sharing of responsibilities by all family members, and joint participation in decision-

making (Weiss 1979, Hetherington 1991b). This collaborative style of household management can enhance children and adolescents' self-esteem by valuing their contribution to the family, broadening their skills and competencies, and facilitating the development of autonomy (Arditti 1999, Demo & Acock 1988, Maccoby, Buchanan, Mnookin & Dornbusch 1993, Stewart et al. 1997, Weiss 1979).

Research on the quality of the parent-child relationship. Regardless of the gender of the custodial parent, consensus exists in the divorce literature of a significant association between the quality of the parent-child relationship and outcomes for children and adolescents whose parents have divorced. One of the earliest studies to examine the quality of post divorce parent-child relationships as mediating the impact of divorce on children was conducted by Hess and Camera (1979). Findings from their research provide evidence that the quality of relationships among family members is a more salient influence on children's behavior than family structure (i.e., intact or divorced). Parenting characterized by high levels of warmth, nurturance, acceptance, and affective interaction was associated significantly with positive outcomes in offspring of divorce (Hess & Camera 1979).

In a ten-year follow-up study to their landmark longitudinal research on children of divorce, Wallerstein and Corbin (1989) investigated outcomes for a subgroup of 63 young women between 11 to 27 years of age whose parents divorced before the beginning of their original research. They found that the quality of the mother-child relationship was strongly associated with the level of functioning for these young women whose parents had divorced. Characteristics of positive mother-child relationships identified in this study included mutual affection and support.

As a follow-up to their longitudinal research on divorcing families, the Stanford Custody Project, Maccoby and her associates (Maccoby et al. 1993) studied parent-child relationships of participants between the ages of 10 and 18 years. The findings of this study are consistent with the divorce literature that supports the significance of the quality of the parent-child relationship in contributing to positive adjustment for individuals whose parents have divorced. Tschann, Johnston, Kline & Wallerstein (1990) found similar results in their study of 351 children of divorce 18 years of age and younger. Findings of this research provide evidence that the strongest predictors of children's emotional adjustment following parental divorce are qualities of the mother-child relationship, in particular, warmth and acceptance. Acock and Demo (1994) analyzed data from the National Survey of Families and Households (NSFH) for more than 4200 families. Their findings also underscore the significance of the quality of mother-child relationship in predicting well being for children of divorce. The quality of the parent-child relationship was assessed by measures of enjoyable interactions, support, and involvement in activities.

Research on parental authority. Consensus exists in the divorce literature of the significant association between parenting style in single-parent families created by divorce and outcomes for children of divorce. Baumrind (1971) developed a model of three prototypic patterns of parental authority—permissive, authoritative, and authoritarian. Parents who demonstrate an authoritative parenting style provide clear and firm direction for their children. They also tend to exercise their authority in a warm, rational, flexible, bargaining style that encourages communication with their children. The characteristics of parental authority in custodial households identified in the divorce

literature to be significantly associated with positive outcomes and adjustment in offspring are similar to the authoritative prototype described by Baumrind (1971). Regardless of family structure (i.e., divorced or intact), authoritative parenting is associated with lower levels of psychopathology and higher levels of social and academic competence in children (Baumrind 1991, Hetherington 1989, Steinberg et al. 1991). Findings from Wallerstein and Corbin's (1989) longitudinal study of children's patterns of adjustment to parental divorce suggest that mothers who exercise parental authority by setting firm but flexible limits significantly contribute to positive outcomes for their daughters.

Similar results were found by Maccoby et al. (1993) in their longitudinal study of the adaptive functioning of adolescents ($n=978$) between the ages of 10 and 18 years from divorced families. Behaviors of the custodial parent that significantly contributed to positive adjustment of their adolescent offspring included: (a) establishing and enforcing standards of behavior, (b) monitoring their adolescent's activities, and (c) inviting their adolescent to participate in joint-decision making with the parent on issues concerning the adolescent's activities.

In their Virginia Longitudinal Study of Divorce and Remarriage, Hetherington and her colleagues (1982) examined vulnerability and protective factors that contributed to children's long-term adjustment to divorce and remarriage. In a 6-year follow-up of this longitudinal research, Hetherington (1989) found that an authoritative parenting style was significantly associated with high social competence and low rates of behavior problems. Parental behaviors associated with an authoritative parenting style in this study included warmth and firm, but responsive, control.

Steinberg and his colleagues (1991) investigated whether the positive association between authoritative parenting style and adolescent adjustment is moderated by the ecological context. They analyzed data from a socioeconomically and ethnically diverse sample of about 10,000 high school students from both intact and divorced families. Regardless of family structure, adolescents reared in homes characterized by an authoritative parenting style scored significantly higher on measures of self-reliance and academic performance, as compared to peers whose home environments were not considered authoritative. In addition, these adolescents scored significantly lower on measures of psychological distress and delinquent behavior.

Research on post divorce interparental conflict. Regardless of parents' marital status, exposure to high levels of interparental conflict during childhood and adolescence have been associated with a plethora of psychological, emotional, behavioral, and interpersonal outcomes in young adults (Amato & Keith 1991a, Zill et al.1993). The effects of post divorce interparental conflict have been the focus of divorce literature more often than any other predictors of child adjustment to marital dissolution. Garber (1991) investigated the long-term effects of family structure (i.e., intact vs. divorced) and interparental conflict on the self-esteem of 324 college undergraduates. Participants were assigned to two groups on the basis of the level of interparental conflict reported (i.e., high conflict and low conflict). Regardless of family structure, individuals in the high conflict group reported significantly lower levels of self-esteem as compared to individuals in the low conflict group.

In a similar study of the relationship of family structure and family conflict to adjustment in 285 college students (Nelson et al.1993), participants were assigned to

three groups on the basis of level of family conflict—low, middle, and high conflict families. Young adult adjustment was assessed by measures of ego identity status and psychological distress. A statistically significant relationship between level of interparental conflict and adjustment was found. Regardless of family structure, participants from families characterized by low to medium levels of interparental conflict demonstrated higher levels of ego identity development and fewer psychiatric symptoms as compared to individuals exposed to high levels of interparental conflict.

Weiner and her colleagues (Weiner et al. 1995) investigated predictors of psychological adjustment in a sample of college students ($n=427$), 21% ($n=90$) of whom were from divorced families. Psychological adjustment was measured by four adjustment variables: (a) global life satisfaction, (b) psychological symptoms (e.g., somatization, obsessive-compulsiveness, anxiety, hostility, paranoid ideation, psychotism), (c) hopelessness, and (d) feelings of sadness and depression.

Predictor variables examined included "inside family" variables (interparental conflict and parent-child bonding), "outside variables" (social support and negative life events), and "individual variables" (gender and age at time of divorce). For young adults from divorced families, indifference in the father was the most significant predictor of adjustment, followed by mother's indifference. The predictor set of variables ("inside family", "outside family", and "individual") explained 31% of the variance in adjustment in the group of young adult children of divorce. The incremental contribution of "inside family" variables (interparental conflict and parent-child bonding) to the prediction of adjustment was significant.

A statistically significant relationship between interparental conflict and depressive symptomology was found by Schmidtgall and his colleagues (2000) in a within-group study of female undergraduates from divorced families. Ensign et al. (1998) examined the relationship between family structure and interparental conflict to levels of intimacy and parental attachment in 101 college students. Results of their research supported a significant inverse association between level of parental conflict and intimacy in romantic relationships. In addition, this same study found a significant inverse relationship between interparental conflict and closeness in parent-child relationships. In other words, the higher the level of conflict between former spouses after divorce, the less emotional closeness young adult children of divorce reported in their relationships with parents. The findings of this study are consistent with those of Tschann et al. (1990), who found a significant negative effect of post divorce interparental conflict on the quality of mother-child relationships. Mothers who were engaged in higher levels of conflict with a former spouse had more rejecting relationships with their children following divorce.

Mechanic and Hansell (1989) collected data from 1067 during a three-wave, three-year study of adolescents' health and well-being. They identified a significant positive relationship between level of parental conflict and longitudinal increases in depressed mood, anxiety, and physical symptoms. However, no significant association between longitudinal changes in health outcomes and the experience of divorce, separation from parents, or parental death was identified. Participants in this research also reported that exposure to interparental conflict was significantly more upsetting than the experience of parental divorce.

Neighbors and his colleagues (1997) recruited a sample of 243 adolescents and their biological mothers to examine the long-term effects of parental conflict on functioning in young adult children of divorce. Their findings supported a significant inverse association between interparental conflict after divorce and level of functioning of male adolescents. Higher levels of post divorce interparental conflict predicted higher levels of antisocial behavior and psychopathology for male adolescents in their study (Neighbors et al. 1997).

Research on gender differences. While significant gender differences have been identified among younger children whose parents divorce (Hetherington 1979, Emery 1982), most researchers have found that these differences become fewer and less significant as children from divorced families mature and reach young adulthood (Zaslow 1989). Weiner and her colleagues (1995) examined the psychological adjustment of 427 college students from divorced families, and found no significant differences among these young adults on the basis of gender. In the second phase of a long-term study of the effects of divorce on a cohort of Finnish adolescents ($n=2139$), Aro and Palosaari (1992) found no significant gender differences between men and women from divorced families at the age of 22.

Consensus that gender differences among children of divorce fail to persist into young adulthood exists among longitudinal studies that use large data sets: Furstenberg & Teitler (1994) analyzed data from the third wave of the National Survey of Children (NSC) when participants were between 18 and 23 years of age; Amato (1988) used a large ($n=2544$) data set to explore differences among 18 to 34 year old young adults; Chase-Lansdale et al. (1995) used data from the longitudinal National Child

Development Study (NCDS). No significant gender differences among young adult children of divorce were identified in any of the studies.

Mechanic and Hansell (1989) also used longitudinal data from a study of adolescents' health and well-being, and results of their analyses did not support gender differences for either the experience of divorce or interparental conflict. The research of Zill and his colleagues (1993) was the only study located that supported gender differences for children of divorce persisting into young adulthood. They analyzed longitudinal data from the National Survey of Children (NSC) and found that young adult women from divorced families were significantly more likely to have poor relationships with their mothers as compared to their male peers.

Research on age at time of parental divorce. While consensus is lacking in the divorce literature in regard to the salience of age at the time of parental divorce among young adult children of divorce, most studies fail to provide evidence of significant differences among young adult children of divorce in relation to an individual's age when their parents divorced. No significant differences among young adult children of divorce in regard to their age when their parents separated were found by Furstenberg and Teitler (1994) in their analysis of data from the third wave of the National Survey of Children (NSC). These findings are consistent with the research of Bolgar and his associates (1995) who examined the long-term effects of parental divorce on interpersonal problems for young adult children of divorce ($N=592$). Weiner and her colleagues (1995) examined the psychological adjustment of 427 college students from divorced families, and found that age at time of parental divorce did not significantly predict psychological adjustment of young adult children of divorce. Schmidtgall et al. (2000) investigated the

relationship between interparental conflict and level of depression for 52 female undergraduate students from divorced families. Their findings also failed to provide evidence of the significance of timing of parental divorce and depressive symptoms.

Of those studies that identified a significant association between age at time of parental divorce and measures of adjustment or functioning for young adult children of divorce, consensus was lacking in regard the direction of the association. Several studies were located that suggest that experiencing parental divorce later in childhood or in adolescence is associated with negative outcomes as a young adult. For example, Chase-Lansdale and his colleagues (1995) used data (n=382 from divorced families) from the longitudinal National Child Development Study (NCDS) and found significant differences among young adult children of divorce. Young adults who experienced the divorce of their parents during their adolescent years scored significantly lower on measures of emotional adjustment than individuals whose parents divorced before adolescence. These results are consistent with the findings of Grant and her associates (1993) who found that age at time of parental divorce significantly affects young adults' adjustment to college. College students whose parents divorced when they were in preschool reported significantly less difficulty adjusting to college, as compared to peers who parents divorced later.

However, other researchers have found evidence that children who experience the divorce of their parents earlier in their lives are at higher risk for negative outcomes as young adults. For example, Johnson and McNeil (1998) examined predictors of developmental task attainment in college undergraduates from divorced families. Their findings provide evidence that young adults who experienced parental divorce earlier in

childhood incur more difficulty individuating from parents and establishing intimate peer relationships. Zill and his associates (1993) used the same longitudinal data from the National Survey of Children (NSC) that Furstenberg and Teitler (1994) used in their research.

In contrast to the findings of Furstenberg and Teitler (1994), Zill and his colleagues (1993) found a significant association between the timing of parental divorce and several outcome variables. These findings suggest that young adults who experienced parental divorce before the age of 6 are at a significantly higher risk of having a poor relationship with their father, exhibiting problem behaviors, and dropping out of high school. However, a weakness of this research design was the criteria for categorizing the timing of parental divorce. Participants whose parents divorced were grouped into only two categories on the basis of timing—experiencing parental divorce before age 6, or between the ages of 6 and 16 years.

Research on Parental Nurturance

Specific parental behaviors and attitudes identified in the literature as protective mechanisms in mediating the effects of parental divorce for children are similar to those conceptualized by Buri (1989) as nurturing—parental warmth, support, love, approval, attention, and concern. Consensus exists among studies of the significant and positive contribution of parental nurturance to the development of self-esteem in adolescents and young adults (Buri 1989, Buri, Kirchner & Walsh 1987, Buri, Murphy, Richtmeier & Komar 1992, Hopkins & Klein 1993, Pawlek & Klein 1997, Watson, Hickman, Morris, Milliron & Whiting 1995). Unfortunately, four of the six studies located eliminated participants whose parents were divorced (Buri 1989, Buri et al. 1987, Buri et al. 1992,

Pawlik & Klien 1997). The research of Hopkins and Klein (1993) included participants who were raised by either biological or stepparents. Parents' marital status was not obtained by Watson et al. (1997), however participation in the study was limited to undergraduates whose parents were alive. No studies were located that investigated the relationship between parental nurturance and any developmental outcomes in young adult children of divorce.

Research on Parental Authority

Baumrind (1971) developed her theory of three prototypic patterns of parental authority (i.e., permissive, authoritative, authoritarian) based on her longitudinal research of childrearing—The Family Socialization and Developmental Competence Project (FSP). Parents who demonstrate an authoritative parenting style provide clear and firm direction for their children, and tend to exercise their authority in a warm, rational, flexible, bargaining style that encourages communication with their children. In the divorce literature, the characteristics of parental authority in custodial households that are significantly associated with positive outcomes and adjustment in children and adolescents closely resemble the authoritative prototype described by Baumrind (1971).

Buri, Louiselle, Misukanis, and Mueller (1988) investigated the relationship between parental authority and self-esteem in a sample of 301 undergraduate students. Participants who parents had divorced, separated, or died were excluded from the study. Undergraduate participants were divided into high and low self-esteem groups based on whether their self-esteem scores fell in the upper or lower one third of the distribution. Of those students in the low self-esteem group, 84% reported that both parents demonstrated authoritarian parenting styles. Conversely, 89% of students in the high

self-esteem group described both of their parents as having authoritative parenting styles. In a similar study, Herz and Gullone (1999) investigated the relationship between parenting style and self-esteem in a sample of 238 Australian and Vietnamese Australian high school students. Their findings supported cultural differences in parenting styles among these groups of students. Vietnamese-Australian parents were significantly more likely to demonstrate an authoritarian parenting style, and Anglo-Australian parents were significantly more likely to be perceived as authoritative. In both groups of students, those who perceived their parents as authoritarian reported significantly lower levels of self-esteem.

Baumrind (1991) used longitudinal data for 139 adolescents in the Family Socialization and Developmental Competence study to investigate the influence of parenting style on adolescent competence and substance abuse. A significant and direct association was found between authoritative parenting style and a high level of competence on most attributes (e.g., individuation, optimism, cognitive motivation, academic achievement) and abstinence from drug and alcohol use.

Ferrari and Olivette (1993) examined the association between parenting style and the development of indecision in a sample of female undergraduate ($n=86$) college students. The only significant finding was the direct influence of authoritarian parenting on the development of indecision in female undergraduate students. Jackson, Bee-Gates, and Henriksen (1994) investigated the influence of authoritative parenting on child competencies and initiation of cigarette smoking in a sample of 937 students, ranging from 3rd to 8th grade. Significant findings included a positive relationship between

authoritative parenting and children's competency levels, and an inverse relationship between authoritative parenting and children's competency levels.

Research on Cognitive Hardiness

The concept of personality hardiness was first identified by Kobasa (1979) in her research on individuals who remained healthy after dealing with high levels of stress. She conceptualized hardiness as a constellation of attitudes, beliefs, and behavioral tendencies comprising three components—commitment, control, and challenge. The research of Kobasa and her colleagues supports the hypothesis that hardy individuals are able to cognitively transform their appraisals of life events in a manner that reduces their level of stress response (Kobasa 1979, Kobasa et al. 1981, 1984). Therefore, hardy individuals are able to remain healthy in a context of high levels of stress.

Early studies explored the moderating effect of cognitive hardiness on health and psychological well being in contexts of high levels of stress. Kobasa's (1979) original research examined the buffering effects of hardiness in the stress-illness relationship in a sample of 161 middle and upper level male executives who experienced high degrees of stressful life events in the previous three years. Her findings supported the hypothesis that personality has a significant moderating effect on how individuals evaluate stressful life events or circumstances, and cope with these challenges so as to reduce the risk of illness. Kobasa and her colleagues (1981) found similar significant results regarding the contribution of a transformational coping style in hardy male executives ($n=259$) in decreasing the threat of illness in a context of stress. One criticism of the early research of Kobasa and her colleagues is its reliance on Anglo-American, middle-class male executives (Lambert & Lambert 1999).

Subsequent studies have examined the association between hardiness and other psychosocial variables (i.e., type A personality type, cognitive appraisal, family functioning, lifestyle habits) hypothesized to moderate the stress-health relationship (Greene & Nowack 1995, Nowack 1986, 1991, Nowack & Pentkowski, 1994, Rhodewalt & Augustdottir 1984, Robitscheck & Kashubeck 1999, Sharpley, Dua, Reynolds, & Acosta, 1995, Williams, Wieb, & Smith 1992). Researchers have conceptualized outcomes of individual's abilities to cope with life stressor along a continuum of positive and negative manifestations. However, support is lacking in the hardiness literature in regard to (a) the nature of the relationship between hardiness and its components, and (b) the hypothesis that individuals who are low in hardiness are at increased risk of negative health and psychological outcomes (e.g., illness, job burnout, absenteeism, lower psychological well-being, and lower work/life satisfaction) in a high-stress context. Researchers suggest that inconsistencies in the hardiness literature concerning the mediating effect of a hardy personality in coping with life stress may be the result of poor operationalization of the hardiness construct by the original Kobasa measures (Funk 1992, Funk & Houston 1987, Hull, Van Treuen, & Virnelli 1987).

A review of the hardiness literature located only one study located that used a non-adult population. Sheppard and Kaschani (1991) examined the relationship between hardiness, stress, and gender to health outcomes in a population of 150 adolescents ranging in age from 14 to 16 years. Among high-stress females, no significant associations between hardiness and health outcomes were identified. However, significant findings were found for two of the hardiness components, commitment and control, in relation to physical and psychological outcomes among high-stress males.

CHAPTER 3 METHODOLOGY

Statement of Purpose

The purpose of this study was to assess the influence of eleven variables on the level of cognitive hardiness reported by young adult children of divorce attending junior and 4-year colleges. The predictor variables included (a) gender, (b) age at time of parental divorce, (c) level of nurturance of the mother, (d) level of nurturance of the father, (e) level of maternal authoritativeness, (f) level of maternal permissiveness, (g) level of maternal authoritarianism, (h) level of paternal authoritativeness, (i) level of paternal permissiveness, (j) level of paternal authoritarianism, and (k) level of post divorce interparental conflict.

In this chapter the research hypotheses, relevant variables, data analysis, population, sample, and data collection procedures are described. Additionally, instrumentation and methodology are discussed.

Hypotheses

The following null hypotheses were evaluated in this study.

Ho(1): There is no significant association between the level of cognitive hardiness reported by young adult children of divorce and gender.

Ho(2): There is no significant association between the level of cognitive hardiness reported by young adult children of divorce and their age at time of parents' divorce.

Ho(3): There is no significant association between the level of cognitive hardness and the level of maternal nurturance reported by young adult children of divorce.

Ho(4): There is no significant association between the level of cognitive hardness and the level of paternal nurturance reported by young adult children of divorce.

Ho(5): There is no significant association between the level of cognitive hardness and the level of maternal permissiveness reported by young adult children of divorce.

Ho(6): There is no significant association between the level of cognitive hardness and the level of maternal authoritativeness reported by young adult children of divorce.

Ho(7): There is no significant association between the level of cognitive hardness and the level of maternal authoritarianism reported by young adult children of divorce.

Ho(8): There is no significant association between the level of cognitive hardness and the level of paternal permissiveness reported by young adult children of divorce.

Ho(9): There is no significant association between the level of cognitive hardness and the level of paternal authoritativeness reported by young adult children of divorce.

Ho(10): There is no significant association between the level of cognitive hardness and the level of paternal authoritarianism reported by young adult children of divorce.

Ho(11): There is no significant association between the level of cognitive hardness and the post divorce level of interparental conflict.

Ho(12): There is no contribution of the variables (i.e., gender, age at time of biological parents' divorce, perceived level of maternal and paternal nurturance, perceived level of maternal and paternal permissiveness, perceived level of maternal and

paternal authoritativeness, perceived level of maternal and paternal authoritarianism, and perceived level of post divorce interparental conflict of biological parents) to the prediction of the level of cognitive hardiness of young adult children of divorce.

Design of the Study

The study used a survey research design. A set of six self-report instruments was distributed to study participants. Five of the instruments (i.e., Maternal Nurturance Scale, Paternal Nurturance Scale, Maternal Authority Scale, Paternal Authority Scale, and Post divorce Parental Conflict Scale) assessed participants' perceptions of specific behaviors and attitudes observed in their biological parents. The sixth instrument, a demographic questionnaire, was used to obtain demographic data and to gather information regarding the experience of parental divorce or of living in a single-parent family.

Delineation of Relevant Variables

Dependent Variable

Cognitive hardiness, the dependent variable in this study, is defined as "a multi-dimensional construct consisting of internal locus of control (versus powerlessness), commitment to work and life activities (versus alienation), and perception of life changes and demands as a challenge (versus threat)" (Green & Nowack 1995, p. 448). Hardy individuals are characterized by a transformational coping style that generates adaptive cognitions that reduce the importance or impact of perceived demands, threats, or challenges on well-being (Greene & Nowack 1995). Therefore, an individual who has developed a high level of cognitive hardiness would respond to stressful life events with optimistic cognitive appraisals and actions directed towards those events.

The 30-item Cognitive Hardiness Scale (CHS, Nowack 1989) was used to assess both positive and negative attitudes and beliefs about work and life that are relatively enduring from day to day. This questionnaire contains items assessing commitment towards work, family, community, and life; affective, emotional, and behavioral self-control; and optimistic perceptions of change, challenge, and threat (Nowack 1989). These dimensions of cognitive appraisal are similar to the three components of hardiness originally proposed by Kobasa (1979) (i.e., commitment, control, and challenge). In the current study, the instrument was administered to undergraduate students who may not currently be employed. Therefore, several modifications were made to the CHS to increase its applicability to this research population. The terms "work" and "job" were replaced with the term "school" in three of the statements of the original CHS, and the term "school" was added to four of the original CHS statements. Higher scores of cognitive hardiness represent a higher prevalence of attitudes and beliefs associated with the existence of a hardy cognitive coping style.

Independent Variables

Nine relational variables were assessed by the instruments in this study: perceived level of maternal nurturance, perceived level of paternal nurturance, perceived level of maternal permissiveness, perceived level of maternal authoritarianism, perceived level of maternal authoritarianism, perceived level of paternal permissiveness, perceived level of paternal authoritarianism, perceived level of paternal authoritarianism, and perceived level of interparental conflict between biological parents post divorce. The two

remaining independent variables, gender and age at time of biological parents' divorce, were obtained from the demographic questionnaire.

Perceived level of paternal and maternal nurturance. Parental nurturance is conceptualized as behaviors directed towards children with the intent of providing physical or psychological nourishment. Examples of parental nurturance include love, warmth, acceptance, approval, affection, support, and concern communicated to children (Buri et al. 1992). Buri's Parental Nurturance Scale (1989) was used to measure parental nurturance from the point of view of a young adult child of divorce for both biological parents. Two forms of the scale were used; one to measure the appraised nurturance of the biological mother, and the other to measure the appraised nurturance of the biological father. Higher scores indicate the greater the appraised level of the parental nurturance measured while lower scores indicate a lower appraised level of parental nurturance.

Perceived level of paternal and maternal authority. Baumrind's (1971) model of parental authority was used to classify the patterns of authority observed in each biological parent by a young adult child of divorce. This model identifies three distinct prototypes of parental authority—permissive, authoritarian, and authoritative. Based on Baumrind's definitions, permissive parents are relatively non-controlling in their interactions with their children, and use a minimum of punishment in disciplining their children. These parents make fewer demands on their children than other parents, and give their children as much control as possible over their own activities. On the other hand, authoritarian parents use punitive measures to control their children's behavior and enforce the directions given to them. These parents are described as detached, valuing unquestionable obedience, and less warm than other parents. Authoritarian parents

discourage verbal give-and-take, and attempt to shape and control their children's behaviors and attitudes whenever possible. Authoritative parents, the third parental authority prototype identified by Baumrind, provide clear and firm direction for their children, and exercise their authority in a warm, rational, flexible, bargaining style that encourages communication with their children.

Buri's Parental Authority Scale (1991) was used to measure parental authority for both biological parents from the perspective of a young adult child of divorce. This questionnaire was developed for the purpose of measuring Baumrind's (1971) permissive, authoritarian, and authoritative parental authority prototypes. Two forms of the scale were used; one to measure the appraised authority of the biological mother, and the other to measure the appraised authority of the biological father. Scores for each parent were calculated for each of the three parental authority scales—permissive, authoritarian, and authoritative. Thus, the PAQ yielded six separated scores for each participant—mother's permissiveness, mother's authoritarianism, mother's authoritativeness, father's permissiveness, father's authoritarianism, and father's authoritativeness. Higher scores indicate the greater the appraised level of the parental authority prototype measured while lower scores indicate the lower the appraised level of the parental authority prototype measured.

Perceived interparental conflict of biological parents post divorce. Interparental conflict of parents after divorce is a multidimensional construct that encompasses factors such as frequency, style, content, and intensity of disharmony between a young adult's parents after their marriage has been dissolved though a divorce. The Post Divorce Parental Conflict Scale was developed by Sonnenblick and Schwarz (1992) to measure

the type and level of parental conflict after divorce as reported from the position of offspring. Respondents were asked to rate each biological parent's behavior towards the other biological parent after their divorce, or while the respondent was growing up if their parents remain married. Higher scores indicate higher levels of interparental conflict while lower scores indicate relatively lower levels of interparental conflict.

Gender and age at time of parental divorce

A demographic questionnaire was used to collect information regarding individual characteristics. The following variables were assessed: age, gender, age at time of biological parents' divorce, race-ethnicity, type of current educational institution (i.e., jr. college, or 4-year university), current GPA, highest level of education completed by mother and father, biological parents' current marital status, custody arrangement, whether either parent remarried, and age when either parent remarried. Participants were also asked an open-ended question regarding any other information that they would like to share with the investigator regarding parenting behaviors that they observed in either parent, and how these behaviors might have affected their personality development and how the participant copes with life stressors.

Data Analysis

Descriptive statistics were computed for each of the continuous predictor variables (i.e., age at time of biological parents' divorce, level of maternal nurturance, level of paternal nurturance, level of maternal permissiveness, level of maternal authoritativeness, level of maternal authoritarianism, level of paternal permissiveness, level of paternal authoritativeness, level of paternal authoritarianism, and level of post divorce interparental conflict). The frequencies of two categorical variables were

calculated: race-ethnicity, and highest level of education completed by mother and father. Cronbach's (1951) coefficient alpha was calculated for the revised Cognitive Hardiness Scale to determine its reliability.

Correlational analysis was used to test the first eleven hypotheses. A correlation describes the nature and degree of relationship between two variables (Huck, Cormier & Bounds 1974). Multiple regression analysis was used to test the final hypothesis. This is a statistical method for studying the association between a dependent variable and two or more independent variables (Shavelson 1996). The multiple correlation coefficient, R^2 , provided a measure of the proportion of variation in the dependent variable (i.e., cognitive hardiness) that is accounted for by the set of independent variables—gender, age at time of biological parental divorce, perceived level maternal nurturance, perceived level paternal nurturance, perceived level of maternal permissiveness, perceived level of maternal authoritarianism, perceived level of paternal permissiveness, perceived level of paternal authoritarianism, perceived level of paternal authoritarianism, and perceived level of interparental conflict between biological parents post divorce. Another goal of the multiple regression analysis was to determine what, if any, associations existed between an independent variable and the dependent variable when the effects for all of the other variables were controlled.

The analysis of data for this investigation was accomplished through use of SPSS 10.0 Correlational and Linear Regression Analysis. A correlation matrix was generated to present all the possible combinations of correlations among the independent and dependent variables. The Pearson product-moment correlation coefficient (r) was calculated for each pair of the eleven independent and dependent variables. The

correlation coefficient (r) measures the nature and degree of relationship between two variables. Variables are considered to be correlated with one another when there is a relationship between them, that can be negative, positive, or non-existent (Huck, Cormier, & Bounds 1974). A negative correlation reflects an inverse relationship between the two variables; in contrast, a positive correlation reflects a direct relationship between the two variables. When the correlation coefficient (r) is equal to zero, no systematic relationship exists between the two variables or a zero correlation is said to exist between the variables. The range of possible values for the correlation coefficient (r) is from -1.00 (i.e., a perfect negative correlation) to +1.00 (i.e., a perfect positive correlation). The absolute value of the correlation coefficient (r) indicates the strength of the relationship between the variables. A dummy code for gender was used in the correlation analysis in this study.

Multiple regression analysis was performed to determine the proportion of variance in the dependent variable (i.e., cognitive hardiness) that can be accounted for by the set of predictor variables. In addition, regression analysis was performed to calculate the proportion of variance in the dependent variable that is accounted for by each of the independent variables when the effects for all other predictor variables are held constant. Use of multiple regression analysis is appropriate when analyses include correlated independent variables or when the independent variables are indexed by continuous measures (Funk & Houston 1987). Additionally, multiple regression analysis is a more sophisticated method of statistical analysis because of its capability to assess the effect of each variable while controlling for the others.

Description of the Population

The population was composed of young adult children of divorce (18 to 25 years old) currently attending a junior or 4-year college in the southeastern United States. Carter and McGoldrick (1998) conceptualize the young adult stage of their family life cycle model to include individuals between the ages of 18 and 25 years. Participants were eligible if they had experienced the divorce of their biological parents at least 12 months before beginning college.

Sampling Procedures

Approval of this study by the Institutional Review Board (IRB) at the University was obtained before collecting data. Two different methods were used to recruit young adult undergraduate students to participate in the study. The primary investigator attended college classes to invite students to voluntarily participate in the study, or the professor teaching a class in which a student was currently enrolled invited them to participate voluntarily in the study. Students were invited to participate who were currently enrolled in general education classes (e.g., introduction to sociology or introduction to psychology) at either a 4-year university or a 2-year community college. Professors offered to give students participating in the study extra credit in their respective classes. The study was described as an investigation of the influence of maternal and paternal behaviors on personality development and coping skills of young adults. Completion of the questionnaires included in participants' packets was identified as the first step in a learning activity to better understand how specific parenting behaviors influence the way young adults think about their ability to cope with life stressors.

Potential participants in the study were given printed information explaining the purpose of the study and requesting their participation (see Appendix A). In compliance with IRB research protocol, participants were informed of potential risks and benefits as a result of participation in the study and asked to sign and return an informed consent form. To ensure the anonymity of participants, the informed consent was collected separately from the packet of questionnaires. Students who were invited to participate in the study and given time during class to complete the questionnaires but declined the invitation were given the opportunity to leave the classroom.

Of the 353 packets distributed, all were completed and returned to the investigator. A total of 353 undergraduate students were recruited to participate in this study, however only 110 met the criteria for this study, which included: (a) currently enrolled in a junior or 4-year college, (b) between 18 and 25 years old, and (c) experienced the divorce of one's biological parents at least 12 months before beginning college. Students whose biological parents had remarried each other or another spouse were eligible for inclusion in the study.

Subjects

The sample consisted of 110 undergraduate students who met the criteria for inclusion in this research. About two thirds (68%) of the sample were female (n=75), and the remaining third (32%) were male (n=35). Slightly over two thirds (69%) were attending a 4-year university, while the third of the sample (31%) reported that they were enrolled at a 2-year community college. The mean GPA was 3.1. The average age at the time of parental divorce of the sample was 8 years old (see Table 1). Most participants (78%) reported that their primary residence following their parents' divorce was with

their mother. However, 14% of the sample reported living primarily with the fathers, and 9% reported living equally with each parent after their parents' divorce (see Table 2).

Table 1

Frequencies for Custody Arrangements

Custody arrangement	Frequency	Percent	Cumulative Percent
Primary residence with mother	86	78.2	78.2
Primary residence with father	15	13.6	91.8
Shared residence with both parents	9	8.2	100.0

n=110

Race. Of the 110 undergraduate students in the sample, 62% (68) were White. The remaining sample was 17% (19) Black, 14.5% (16) Hispanic, 4.5% (5) Asian, and 2% (2) were grouped together as "Other." The ethnic diversity in this sample was slightly greater than that of the student body of one of the 4-year universities that participants attended: Caucasian (77%), Black (10%), Hispanic (4.5%), Asian (5.5%), and other (3%).

Table 3 includes the frequency distribution by race-ethnicity for the sample.

Parental Education. The highest level of education completed for participants' mother and fathers is reported in Table 4 (mother) and Table 5 (father). Regardless of a parent's gender, the highest level of education completed was high school, and about two-thirds of participants' parents graduated from a junior college.

Table 2

Frequencies of Age at Time of Parental Divorce

Age at time of parental divorce (years)	Frequency	Percent	Cumulative Percent
1	13	11.9	11.9
2	13	11.9	23.9
3	9	8.2	32.1
4	2	1.8	33.9
5	8	7.3	41.3
6	8	7.3	48.6
7	9	8.2	56.9
8	5	4.5	61.5
9	2	1.8	63.3
10	3	2.7	66.1
11	5	4.5	70.6
12	4	3.6	74.3
13	5	4.5	78.9
14	3	2.7	81.7
15	3	2.8	84.4
16	4	3.6	88.1
17	13	11.8	100.0

n=110

Data Collection

Each participant in the study was given a separate packet of questionnaires, a letter explaining the purpose of the study, and an informed consent form. Participants were directed to respond privately and not to discuss their answers with each other until the surveys have been sealed in their original envelope. Each participant was asked to complete a demographic questionnaire, the Cognitive Hardiness Scale, two versions of the Parental Nurturance Scale (one for each biological parent), two versions of the Parental Authority Scale (one for each biological parent), and the Post divorce Parental

Conflict Scale if their biological parents are divorced. These assessments took approximately 30 minutes to complete.

Table 3

Race-Ethnic Distribution of the Sample

Race-ethnicity	Frequency (f)	Percent (%)	Cumulative f	Cumulative %
Caucasian	68	61.8	68	61.8
Black	19	17.3	87	79.1
Hispanic	16	14.5	103	93.6
Asian descent	5	4.5	108	98.1
Bi-Racial, Other	2	1.8	110	100.0

n=110

Table 4

Maternal Education Frequency Distribution

Mother's level of education	Frequency (f)	Percent (%)	Cumulative f	Cumulative %
Middle high school	7	6.4	7	6.4
High school	44	40.0	51	46.4
Junior college	23	20.9	74	67.3
College	23	20.9	97	88.2
Master's degree/Ph.D.	13	11.8	110	100.0

n=110

Table 5

Paternal Education Frequency Distribution

Father's level of education	Frequency (f)	Percent (%)	Cumulative f	Cumulative %
Middle high school	5	4.5	5	4.5
High school	51	46.4	56	50.9
Junior college	16	14.5	72	65.5
College	23	20.9	95	86.4
Master's degree/Ph.D.	15	13.6	110	100.0

n=110

Some participants were given the opportunity to complete the packet of questionnaires and entry form in class, and return them to the investigator or professor. A participant's signed informed consent was collected separately from the questionnaires to ensure participant confidentiality. When participants were not given time in class to complete the packet of questionnaires, stamped envelopes in which to return the completed questionnaires and informed consent to the investigator were given to participants. The investigator was available to answer questions and process the assessment in person or by telephone.

Instrumentation

Participants were given a packet of five questionnaires to complete for this study. A demographic questionnaire was used to collect information regarding individual

characteristics: The following variables were assessed: age, gender, age at time of biological parents' divorce, race-ethnicity, type of current educational institution (i.e., 2-year college or 4-year university), current GPA, highest level of education completed by mother and father, biological parents' current marital status, custody arrangement, whether either parent remarried, and age when either parent remarried. Participants were asked an open-ended question about any other information that they would like to share regarding parenting behaviors that they observed in either parent, and how these behaviors might have affected their personality development and how the participant copes with life stressors. Four other instruments were used; the Cognitive Hardiness Scale (CHS), the Parental Nurturance Scale (PNS), the Parental Authority Scale (PAQ), and the Post divorce Parental Conflict Scale (PPCS).

Cognitive Hardiness Scale (CHS)

The Cognitive Hardiness Scale (CHS, Nowack 1990, 1991) is a 30-item questionnaire designed to assess the possession of specific attitudes and beliefs based on the concept of personality hardiness attributed to Kobasa and her colleagues. The Cognitive Hardiness Scale (Nowack 1991) was chosen due to its improved reliability and validity in comparison to Kobasa's original Personality Hardiness scales. Drawing on existential psychology, Kobasa (1979) conceptualized hardiness as constellation of three relatively stable and inseparable components. The first component of hardiness, commitment (as opposed to alienation), refers to an individual's ability to sustain curiosity and feel deeply involved in life activities. Control, in contrast to powerless, refers to a belief in one's ability to control or influence the events of their life experience.

The third component of hardiness, challenge, refers to a positive evaluation of change as a normal life challenge and opportunity for personal growth.

These optimistic beliefs and tendencies comprise Kobasa's proposed hardy personality style, which has been the focus of numerous studies for its protective effect on the stress-strain relationship (Kobasa et al. 1982, 1983, Kobasa & Puccetti 1983). Hardy individuals are characterized by a transformational coping style that generates adaptive cognitions thereby reducing the importance or impact of perceived demands, threats, or challenges on well-being (Greene & Nowack 1995). The research of Kobasa and her colleagues provides support for the hypothesis that individuals who respond to the challenges of work and life with hardy appraisals are physically healthier (Kobasa 1979, Kobasa et al. 1981, 1982, 1983).

However, both Kobasa's research and measurement instruments have plagued by numerous criticisms (Funk 1992, Funk & Houston 1987, Hull, Van Treuren & Vimelli 1987; Jennings & Staggers 1994). While it might appear that Kobasa and her colleagues have conducted several studies of hardiness, most of her published research was based on the same data set (Hull et al. 1987). In addition, near-significant interactions were considered empirical evidence supporting personality hardiness as a stress moderator in two of Kobasa's studies (Kobasa & Puccetti 1983, Kobasa et al. 1983).

Lastly, Kobasa's research on hardiness is plagued by several statistical problems. Analysis of variance (ANOVA) or analysis of covariance (ANCOVA) has been used frequently in research designs that include hardiness, stressful life events, and measures of other concepts (e.g., social support) as independent variables. However, previous studies have demonstrated that hardiness is significantly correlated with both of these

variables (Kobasa 1982, Kobasa & Puccetti 1983). Therefore, use of either of these statistical techniques (i.e., ANOVA or ANCOVA) to examine the relationship among hardiness, stressful life events, and other concepts (e.g., social support) violates the assumption of independence among factors or dimensions (Glass & Hopkins 1984, p. 445). Furthermore, the categorization of continuous variables (e.g., through median splits) so that they can be used in an ANOVA or ANCOVA research design can result in a significant loss of information and this practice is undesirable (Funk & Houston 1987). Several hardiness studies (Kobasa et al. 1981) have been plagued by this statistical flaw.

Other criticisms have focused on the validity of Kobasa's hardiness measures and include: (a) use of negative indicators to define and measure the presence of hardiness (Funk & Houston 1987, Hull et al. 1987), (b) a retrospective design in the original study (Hull et al. 1987), (c) questionable psychometric properties of some of the hardiness scales (Hull et al. 1987, Jennings & Staggers 1994), and (d) lack of report of content validity for earlier hardiness scales.

While revised hardiness scales developed by Kobasa and her colleagues addressed some of the shortcomings characterizing earlier instruments, all of the Kobasa hardiness scales include a majority of negatively keyed items (Funk 1992). As a result, critics have suggested that Kobasa's hardiness instruments inadvertently measure the negative personality characteristic of neuroticism (Funk & Houston 1987). While third-generation scales demonstrate improved internal consistency for the Hardiness composite measure ($\alpha = .88$), internal consistency for the Commitment, Control, and Challenge subscales is less respectable ($\alpha < .70$ for each subscale) (Funk 1992).

Nowack (1989) developed the Cognitive Hardiness Scale as an alternative instrument to measure hardness in response to criticisms of Kobasa's initial hardness instruments. The CHS has its roots in the empirical work of Lecourt (1980), Phares (1976), and Antonovosky (1979). This 30-item questionnaire contains items assessing commitment towards work, family, community, and life; affective, emotional, and behavioral self-control; and optimistic perceptions of change, challenge, and threat (Nowack 1989). These dimensions of cognitive appraisal are similar to the three components of hardness originally proposed by Kobasa (1979) (i.e., commitment, control, and challenge). However, the Cognitive Hardiness Scale includes items that assess both positive and negative indicators of the hardness construct, which may minimize the conceptual and empirical problems identified in the Kobasa hardness measures (Funk & Houston 1987).

The CHS assesses attitudes and beliefs about work and life that are relatively enduring from day-to-day. These include: (a) control—the belief that one has control over significant outcomes in life, (b) commitment—a sense of commitment to one's work, family, self, and hobbies, and (c) challenge—a perception of life changes as challenges or opportunities for personal growth. Participants were asked to indicate how strongly they agree with specific statements about their attitudes beliefs using 5-point Likert-type scale where 1 = Strongly Agree, 2 = Agree, 3 = Neither Agree or Disagree, 4 = Disagree, and 5 = Strongly Disagree. The CNS conceptualizes hardness as a unitary construct, as opposed to the Kobasa hardness instruments that determine a composite hardness score calculated by the summation of the three subscale scores (i.e., commitment, control, and challenge).

The CHS was developed along with two other coping-related scales (i.e., the Coping Style Inventory and the Health Habits scale) for use in Nowack's (1989) investigation of the effects of coping style and cognitive hardiness on physical and psychological health status. During scale development, a combination of factor analysis and rational procedures eliminated weak or redundant items. Item-scale correlation had to be $>.25$ and $<.50$ to be retained. These psychometric guidelines were used to maximize representations of different aspects of coping of each scale and produce relatively independent scales (Nowack 1989). In the original study, the CHS demonstrated respectable internal consistency reliability (alpha) of .83.

Subsequent studies using the CHS to measure cognitive hardiness provide further evidence of respectable reliability and validity. The CHS demonstrated high test-retest reliability over a period of 2 two-weeks ($\alpha = .95$), moderate test-retest reliability after a four-month period of time ($\alpha = .86$), and criterion-related validity with diverse organizational and self-report health outcomes in several retrospective and prospective studies (Andrassy 1992, Schwartz et al. 1992, Nowack 1989, 1990, 1991, 1994).

Parental Nurturance Scale (PNS)

The Parental Nurturance Scale (PNS, Buri 1989) is a 24-item questionnaire designed to measure parental nurturance from the perspective of the individual evaluating the nurturance received from each of their parents. Parental nurturance is conceptualized as behaviors or attitudes directed towards children with the intent of providing physical or psychological nourishment. Examples of parental nurturance include love, warmth, acceptance, approval, affection, support, and concern communicated to children (Buri et al. 1992).

An individual's subjective perceptions of other's evaluations about one's self, as opposed to other's actual evaluations of one's self (e.g., parents), are assumed to be more salient in the process of assuming specific characteristics about one's self. According to Rosenberg (1979), parents are the primary agents influencing the development of these "reflected appraisals" by their children. Therefore, an individual's global self-concept reflects the assimilation of subjective interpretations of others' evaluations of one's self, as opposed to actual evaluations of others (e.g., parents).

Several sources were used for development of statements related to parental nurturance (Bronfenbrenner 1961, Schaefer & Bell 1958, Straus & Brown 1978). Participants were asked to indicate how strongly they agree with specific statements about the parental nurturance that he or she received from each biological using 5-point Likert-type scale ranging from strongly disagree (1) to strongly agree (5). Examples of items from the Mother's Nurturance Scale include: 'My mother seldom says nice things about me,' 'My mother is often critical of me and nothing I do seems to please her,' and 'My mother enjoys spending time with me.' Two forms of the PNS were constructed—one to measure the appraised nurturance of the mother, and another to measure the appraised nurturance of the father. The statements included on each form are identical, however the wording for each statement indicates which parent's behaviors are being assessed.

The initial 118-item PNS questionnaire was administered to 333 undergraduate students (Buri 1989). Students who identified that one of their parents had died or their parents were divorced or separated were excluded from the sample. The 118 statements were evaluated for duplications, and 42 items were deleted on the basis of restatement of

other items. A revised 76-item questionnaire was administered to 177 undergraduate students, and item-score/total-score correlations were calculated for each of the 76 items (Buri 1989). The final version of the Parental Nurturance Scale included the 24 items that yielded an item-score/total-score correlation greater than .70. The wording of the 24 statements was modified so that the final questionnaire contained an equal number (i.e., n=12) of positively-stated and negatively-stated items.

In another study of 156 college students, the Parental Nurturance Scale demonstrated a high internal consistency reliability, as Cronbach's (1951) coefficient alpha values were .95 for mother's nurturance and .93 for father's nurturance. Adequate test-retest reliability over a period of 2 two-weeks was also supported (i.e., r = .92 for mother's nurturance; r = .94 for father's nurturance) (Buri 1989). In this investigation, both forms of the Parental Nurturance Scale were given to participants. Instructions for completing the instrument requested that participants indicate how strongly they agreed with statements for each of their biological parents.

Parental Authority Scale (PAQ)

The Parental Authority Scale (PAQ, Buri 1991) is a 30-item questionnaire designed to measure parental authority from the perspective of an individual evaluating the patterns of authority exercised by his or her parents. The instrument is based on Baumrind's (1971) model of three distinct prototypes of parental authority—permissive, authoritarian, and authoritative parenting. The questionnaire items were designed to measure the permissiveness, authoritarianism, and authoritativeness of parents as phenomenologically appraised by their son or daughter. The PAQ assesses parental authority using a 5-point Likert-type scale ranging from strongly disagree (1) to strongly

agree (5). Two forms of the PAQ were constructed; one to assess an individual's appraisals of their mother's parenting behaviors, and another to assess an individual's appraisals of their father's parenting behaviors.

An individual's subjective perceptions of other's evaluations about one's self, as opposed to other's actual evaluations of one's self (e.g., parents), are assumed to be more salient in the process of assuming specific characteristics about one's self. According to Rosenberg (1979), parents are the primary agents influencing the development of these "reflected appraisals" by their children. Therefore, an individual's global self-concept reflects the assimilation of subjective interpretations of others' evaluations of one's self, as opposed to actual evaluations of others (e.g., parents).

Baumrind's (1971) model of parental authority describes three distinct prototypes (i.e., permissive, authoritarian, and authoritative). Baumrind's describes permissive parents as relatively non-controlling in their interactions with their children, and using a minimum of punishment in disciplining their children. These parents make fewer demands on their children than other parents, and give their children as much control as possible over their own activities. On the other hand, authoritarian parents use punitive measures to control their children's behavior and enforce the directions given to them. These parents are described as detached, valuing unquestionable obedience, and less warm than other parents. Authoritarian parents discourage verbal give-and-take, and attempt to shape and control their children's behaviors and attitudes whenever possible. The third parental authority prototype identified by Baumrind, authoritative parents, provide clear and firm direction for their children, and exercise their authority in a warm, rational, flexible, bargaining style that encourages communication with their children.

Initial scale development consisted of 48 questionnaire items constructed from descriptions of the permissive, authoritarian, and authoritative parenting prototypes proposed by Baumrind (1971). Each item was stated from an individual's perspective of authority exercised by his or her parents. An example of an item from the permissive scale is 'My mother/father has always felt that what children need is to be free to make up their own minds and to do what they want to do, even if this does not agree with what their parents might want.' An example of an item from the authoritarian scale is 'As I was growing up my mother/father did not allow me to question any decision that she/he had made.' An example of an item from the authoritative scale is 'My mother/father always encouraged verbal give-and-take whenever I have felt that family rules and restrictions were unreasonable.'

Twenty-one professionals (11 women, 10 men) from a variety of disciplines were given the 48 questionnaire items, and verbatim descriptions for each of Baumrind's three parenting prototypes (i.e., permissive, authoritarian, authoritative). Participants were asked to evaluate each of the questionnaire items on the basis of its accuracy in characterizing each of the prototypes. Items that failed to delineate clearly one of the three parenting prototypes were discouraged from being categorized by the professionals. When consensus existed among more than 95% of the participants that an item clearly represented one of the three parenting prototypes, it was included in the final version of the questionnaire.

Thirty-six of the initial questionnaire items met the criterion for inclusion in the final Parental Authority Questionnaire, and 12 items were deleted from the original 48 items. Two-thirds of the remaining 36 items were endorsed by 100% of the professionals

evaluating the accuracy of the items in characterizing each of the parenting prototypes.

As a result, the revised 36-item PAQ has high content validity. Thirty of the 36 questionnaire items that met the inclusion criteria were included in the final version of the Parental Authority Questionnaire. Ten items from each parenting prototype were retained in the revised PAQ, and two forms of the questionnaire were constructed to evaluate the parental authority provided by each biological parent. The PAQ generates six separate scores for each participant—mother's permissiveness, mother's authoritarianism, mother's authoritativeness, father's permissiveness, father's authoritarianism, father's authoritativeness. Scores for each of these constructs range from 10 to 50, and higher scores indicate a greater level of appraised parental authority prototype measured.

The revised 30-item Parenting Authority Questionnaire was initially administered to 62 undergraduates (Buri 1991). Two weeks later 61 of the original participants completed the PAQ again, yielding adequate test-retest reliabilities—.81 for mother's permissiveness, .86 for mother's authoritarianism, .78 for mother's authoritativeness, .78 for father's permissiveness, .77 for father's authoritarianism, and .92 for father's authoritativeness. In another sample, 185 undergraduate students completed the PAQ (Buri, 1991). Highly respectable Cronbach's (1951) coefficient alpha values were obtained—.75 for mother's permissiveness, .85 for mother's authoritarianism, .82 for mother's authoritativeness, .72 for father's permissiveness, .74 for father's authoritarianism, and .85 for father's authoritativeness. Despite the small number of items for each parental authority scale (i.e. 10 items), the reliability and coefficient alpha

values demonstrated by Parental Authority Questionnaire in this sample is very respectable.

The discriminant validity of the Parental Authority Questionnaire was examined in a study of 127 college students (Buri1991). Divergent responses to items from these 3 scales were demonstrated—mother's authoritarianism was inversely related to mother's permissiveness ($r = -.38$, $p < .0005$) and to mother's authoritativeness ($r = -.48$, $p < .0005$). Comparison of father's PAQ scores yielded similar results—father's authoritarianism was inversely related to father's permissiveness ($r = -.50$, $p < .0005$) and to father's authoritativeness ($r = -.52$, $p < .0005$). In addition, lack of a significant relationship between permissiveness and authoritativeness was demonstrated, regardless of gender— $r = .07$, $p < .10$ for mother's scores and $r = .12$, $p < .0005$ for father's scores.

Post divorce Parental Conflict Scale (PPCS)

The Post divorce Parental Conflict Scale (PPCS, Sonnenblick & Schwartz 1992) was used to assess an individual's appraisal of their parents' conflict after divorce. Previously developed instruments have only measured post divorce parental conflict from the parents' perspective. The PPCS is the only available instrument developed specifically to assess an individual's appraisal of interparental conflict post divorce. Consistent with the symbolic interactionist framework, an individual's perception of the conflict between their biological parents post divorce is more influential than the parent's self-report.

The PPCS is an 82-item self-report inventory that measures the type and level of parental conflict after divorce as reported from the position of the child. The scale was designed and validated for use with college students who reported level of conflict

between their parents after divorce across two time periods the first year after the divorce, and the past twelve months. Respondents were asked to rate each parent's behavior using a 5-point Likert-type scale (1 = "The event has never happened" to 5 = "This happened every day").

Item content progresses from low conflict and hostility to intense conflict and violence. An example of a low conflict item is 'My mother discussed issues calmly with my father'. An example of high conflict and violence item is 'My father threw things at my mother'. The PPCS yields three subscales for each parent: verbal hostility, indirect hostility, and physical hostility. Three scores are calculated for each subscale—one for each parent, and a combined score of the sum of each parents score (e.g., mother's verbal hostility, father's verbal hostility, and combined verbal hostility). The total scale for each parent is calculated, and added together to determine the combined total scale.

Development of the PPCS consisted of two stages (Sonneblick & Schwartz 1992). The first stage involved construction of statements to delineate the behaviors of divorced parents that could be observed by sons and daughters. Ninety-five undergraduate students rated the frequency of each behavior during the first year after divorce and during the year before the study. Participants were required to have been at least 6 years old at the time of their parents' divorce, and the minimum time since parental divorce was two years before the study. Items were methodologically reduced through elimination of unreliable statements, and the psychometric properties of the subscales were assessed.

The second stage involved establishing the validity of the Post divorce Parental Conflict Scale. A sample of 135 subjects was given the revised 82-item scale (39

questions for each parent), and these participants met the same criteria for inclusion as the sample in the first stage. Alpha coefficients of internal reliability ranged from .80 to .93 for the revised scale. The patterns of correlations among the three subscales and other measures support the validity of verbal, physical, and indirect hostility as separate constructs (Sonnenblick & Schwartz 1992).

Morris and West (2000) evaluated the reliability and validity of the Post divorce Parental Conflict Scale in a sample of 127 undergraduate students. Participants met the following criteria: (a) single, never before married; (b) between the ages of 18 and 24 years, (c) biological parents had divorced only once, (d) at least 6 years old at the time of parental divorce, and (e) parents had been divorced for at least two years. The only time period assessed for interparental conflict was the first year post divorce. The mean total conflict scores were: mother = 78.97 (SD = 22.07), father = 74.78 (SD = 24.90, and combined = 162.40 (SD = 45.43). High internal consistency was demonstrated by each of these three total scores (i.e. mother total scale, father total scale, combined total scale) as coefficients ranged from .88 to .96, with a mean of .92. Coefficient alphas for each of the PPCS subscales exceeded the conventional standard of .80 (Nunnally & Bernstein 1994).

In this study, interparental conflict post divorce was assessed by use of the combined total scale for the first year after divorce. The total scale for each parent was calculated by summing each of their scores for the three hostility subscales (i.e., verbal, indirect, and physical), and each parent's total scale was added to calculate the total combined scale measuring interparental conflict post divorce.

Demographic Questionnaire

A demographic questionnaire (see Appendix B) was used to collect information regarding individual characteristics. The variables included age, gender, age at time of biological parents' divorce, race-ethnicity, type of current educational institution (i.e., jr. college, or 4-year university), current GPA, highest level of education completed by mother and father, biological parents' current marital status, custody arrangements, whether either parent remarried, and age when either parent remarried. Participants were also asked an open-ended question regarding any other information that they would like to share with the investigator regarding parenting behaviors that they observed in either parent, and how these behaviors might have affected their personality development or how they cope with life stressors.

CHAPTER 4 DATA ANALYSIS AND RESULTS

Analysis Procedures

The purpose of this study was to examine the influence of eleven variables on cognitive hardiness among young adult children of divorce. Nine of these variables focused on aspects of parent-child and parent-parent interaction reported by the young adult child of divorce: (a) level of nurturance of the mother, (b) level of nurturance of the father, (c) level of maternal authoritativeness, (d) level of maternal permissiveness, (e) level of maternal authoritarianism, (f) level of paternal authoritativeness, (g) level of paternal permissiveness, (h) level of paternal authoritarianism, and (i) level of post divorce interparental conflict. The influence of two other variables, gender and age at time of parental divorce, were also examined in relation to the development of cognitive hardiness in young adult children of divorce.

The sample for this study of young adult children of divorce was composed of college students between the ages of 18 and 25 years whose biological parents were divorced at least 12 months before their participation in this study. Participants were enrolled in classes in either a 2-year or 4-year college. Specifically, cognitive hardiness was assessed by the Cognitive Hardiness Scale (CHS, Nowack, 1990,1991). Six questions were modified from the original CHS instrument to be more applicable to a college student population. For example, the original statement, "my involvement in non-work activities and hobbies provides me with a sense of meaning and purpose", was

modified to, "my involvement in non-school activities and hobbies provides me with a sense of meaning and purpose."

The level of nurturance for each of the participant's biological parents was measured by the Parental Nurturance Scale (PNS, Buri 1989). Two forms of the PNS were used to measure an individual's perception of paternal nurturance and maternal nurturance. Baumrind's (1971) three parental authority prototypes (i.e., permissive, authoritarian, and authoritative) were assessed using Buri's (1991) Parental Authority Scale. Two forms of the PAQ were given to participants so as to measure separately paternal and maternal permissiveness, paternal and maternal authoritarianism, and paternal and maternal authoritativeness as observed by a young adult child of divorce.

Interparental conflict was measured by the Post divorce Parental Conflict Scale (PPCS, Sonnenblick & Schwartz 1992). Two forms of the PPCS were given to participants to measure the type and level of parental conflict observed separately for each biological parent. The PPCS scores for each parent were added together to create a composite post divorce interparental conflict score. Lastly, a demographic questionnaire was created for this investigation to collect information regarding individual characteristics. Two of these variables, gender and age at time of divorce, were used in the analysis.

The analysis of data for this investigation was accomplished through use of SAS 10.0 Correlational and Regression Analysis. Descriptive statistics were computed for each of the continuous independent variables (i.e., age at time of parental divorce, level of maternal nurturance, level of paternal nurturance, level of maternal permissiveness, level of maternal authoritativeness, level of maternal authoritarianism, level of paternal

permissiveness, level of paternal authoritativeness, level of paternal authoritarianism, and level of post divorce interparental conflict). These descriptive statistics are presented in Table 6.

Table 6

Means and Standard Deviations of Independent and Dependent Variables

Variable	Range	Minimum	Maximum	Mean	Std. Deviation
Age at divorce	16	1	17	7.83	5.51
Maternal nurturance	96	24	120	97.75	23.66
Paternal nurturance	96	24	120	88.40	25.60
Maternal authoritarianism	35	15	50	31.32	7.49
Maternal permissiveness	30	10	40	25.08	6.22
Maternal authoritativeness	41	9	50	33.66	8.25
Paternal authoritarianism	31	17	48	31.66	7.19
Paternal permissiveness	33	13	46	26.08	6.93
Paternal authoritativeness	39	10	49	31.53	7.34
Interparental conflict	177	0	177	66.92	44.98
Cognitive hardness	56	70	126	99.45	11.13

n=110

The descriptive statistics for the dependent variable, cognitive hardness, were similar to the results of Nowack's (1990) initial development of the CHS. The mean

level of cognitive hardness for his research sample was 97.32 and the standard deviation in CHS scores was 11.45. In comparison, the mean CHS score for the present study was slightly higher (99.45) than Nowack's findings, however the standard deviation was almost identical (11.13). The sample in Nowack's (1990) initial research was comprised of 466 employees in professional and management positions, and the mean age of the sample was 36 years. Sixty-two percent of the sample possessed at least a 2-year college degree. While Nowack's sample was older than the sample in this research, the descriptive statistics for the CHS scores of this study and Nowack's original research are surprisingly similar.

It was impossible to compare the descriptive statistics for the level of maternal and paternal nurturance reported by participants in this study with the findings from previous research. Researchers utilizing the PNS to examine parental nurturance in previous studies failed to report descriptive statistics for either of the measures of parental nurturance (Buri 1989, Buri et al. 1987, 1992).

In regard to previous studies of perceived parental authority style reported by undergraduate students, the descriptive statistics for maternal and paternal authority style calculated in this study were similar to the results reported by previous researchers (Flett et al. 1995, Gonzalez, Greenwood, & Hsu 2001, Wintre & Sugar 2000). The mean level of maternal authoritarianism reported in this study was 31.32, as compared to the range of means of 27.44 to 31.28 reported in previous studies. Similarly, the standard deviation for the reported level of maternal authoritarianism ranged from 6.60 to 9.48 in previous studies, and the standard deviation found in this study was 7.49, almost in the middle of this range. The mean level of maternal permissiveness in this study (25.08) fell within

the range of scores found in previous studies (23.33 to 26.82), as did the standard deviation (6.22), when compared to the range of 5.20 to 7.12 found in previous studies. Lastly, the mean score reported for level of maternal authoritativeness (33.66) reported in the current study fell near the lower range of mean scores (33.08 to 36.46) for maternal authoritativeness calculated in previous research utilizing a sample of undergraduate students. Interestingly, the standard deviation for the reported level of maternal authoritativeness (8.25) was slightly higher than any of the standard deviations reported in previous studies (5.95 to 7.95).

In comparison, the means and standard deviations for reported levels of paternal authority styles were similar to those found in previous studies utilizing samples of undergraduate students. The mean level of paternal authoritarianism (31.66) found in this study was within the very small range of mean scores of previous studies (31.36 to 32.89), however the standard deviation (7.19) was slightly smaller than the range of 8.07 to 10.61 characterizing previous research. In comparison, the mean level of paternal permissiveness (26.08) reported by this sample was within the range of mean scores of 23.5 to 26.8 reported by previous researchers. Similarly, the standard deviation for the level of paternal permissiveness (6.93) in this sample also fell within the range of standard deviations (5.7 to 7.96) reported in previous studies.

Surprisingly, the mean post divorce interparental conflict score (66.92) reported on the PPCS were in this sample was significantly lower than those reported in two previous studies (i.e., 167.91 and 162.4) (Morris & West 2000, Sonnenblick & Schwartz 1995). However, the standard deviation for scores on the PPCS (44.98) in this study was very similar to those calculated in the two previous studies (i.e., 45.87 and 45.53).

Analysis Results

The goal of the correlational analysis was to test the first eleven hypotheses. The intercorrelations (r) between pairs of the independent variables (i.e., gender, age at time of parental divorce, level of maternal nurturance, level of paternal nurturance, level of maternal permissiveness, level of maternal authoritativeness, level of maternal authoritarianism, level of paternal permissiveness, level of paternal authoritativeness, level of paternal authoritarianism, and level of post divorce interparental conflict) and the dependent variable (i.e., cognitive hardiness) were computed for the sample. A dummy coding variable was used for gender. These correlations are displayed in Table 7.

Table 7

Intercorrelations between Independent and Dependent Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. HAR	1											
2. GEN	.07	1										
3. AGE	.15	-.04	1									
4. MNUR	.20*	.02	.04	1								
5. PNUR	.35**	.07	.10	.21*	1							
6. MTAR	-.03	.01	-.16	-.33**	-.11	1						
7. MPER	-.05	.01	.06	.08	-.06	-.56**	1					
8. MTAT	.15	-.01	.02	.73**	.15	-.34**	.10	1				
9. PTAR	.05	-.07	.10	.08	-.30**	.18	-.03	-.06	1			
10. PPER	-.14	.18	-.18	-.18	-.07	.07	.18	.01	-.51**	1		
11. PTAT	.06	.04	.10	.31**	.70**	-.14	-.06	.33**	-.27**	-.07	1	
12. CONF	-.06	-.13	.15	-.21*	-.25**	.12	.10	-.32**	.22*	-.01	-.23*	1

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed); n=110

NOTE: HAR = cognitive hardness; GEN = gender, AGE = age at time of parental divorce; MNUR = maternal nurturance; PNUR = paternal nurturance; MTAR = maternal authoritarianism; MPER = maternal permissiveness; MTAT = maternal authoritativeness; PTAR = paternal authoritarianism; PPER = paternal permissiveness; PTAT = paternal authoritativeness; CONF = post divorce interparental conflict.

A number of significant correlations among independent and dependent variables were identified. Nine correlations among variables were significant at the $p < .01$ level. The strongest of these was the positive relationship identified between maternal nurturance and maternal authoritativeness ($r = .73$). Only slightly weaker in magnitude was the positive association between paternal nurturance and the level of paternal authoritativeness ($r = .70$). A significant relationship was also identified between parental nurturance and the level of authoritarianism for each parent. The correlation between paternal nurturance and paternal authoritarianism was found to be $-.30$, while the correlation between maternal nurturance and maternal authoritarianism was calculated to be $-.33$. For each of these relationships, an increase in the level of parental nurturance was associated with a corresponding decrease in the level of parental authoritarianism that reached significance at the $p < .01$ level.

Surprisingly, the relationship between the level of maternal nurturance and paternal authoritativeness also reached significance at the $p < .01$ level. For an increase in the level of maternal nurturance, there was a corresponding increase in the level of paternal authoritativeness ($r = .31$). Two additional correlations reached significance for relationships between maternal and paternal variables: maternal and paternal authoritativeness ($r = .33$, $p < .01$), and maternal nurturance and paternal nurturance ($r = .21$, $p < .05$).

Several intercorrelations among parental authority styles reported for each parent as well as those between parents were significant at the $p < .01$ level. First, a negative association was identified between the level of parental permissiveness and parental

authoritarianism for both mothers and fathers. For example, the correlation between paternal permissiveness and paternal authoritarianism was -.51. Of a similar magnitude was the association between maternal permissiveness and maternal authoritarianism ($r = -.56$). For each of these relationships, an increase in the level of parental permissiveness was associated with a corresponding significant decrease in the level of parental authoritarianism reported. In addition, the correlations between parental authoritativeness and authoritarianism reached significance at the $p < .01$ level. The relationships were of similar strength and direction for each parent: maternal authoritativeness and authoritarianism ($r = -.34$), paternal authoritativeness and authoritarianism ($r = -.27$).

Five intercorrelations reached significance for interparental conflict: maternal nurturance ($r = -.21$, $p < .05$), paternal nurturance ($r = -.25$, $p < .01$), maternal authoritativeness ($r = -.32$, $p < .01$), paternal authoritarianism ($r = .22$, $p < .05$), and paternal authoritativeness ($r = -.23$, $p < .05$). Finally, both of the parental nurturance variables were significantly correlated with cognitive hardiness: maternal nurturance ($r = .20$, $p < .05$), and paternal nurturance ($r = .35$, $p < .01$).

A regression model was developed to determine what, if any, relationship existed between the set of independent variables and the dependent variable, cognitive hardiness. This analysis can be conducted globally by evaluating the entire model, or by conducting an analysis for each individual variable when the effects for all other variables are held constant. Cognitive hardiness was designated as the dependent variable in this model. The independent variables included gender, age at time of biological parental divorce, perceived level of maternal nurturance, perceived level of paternal nurturance, perceived

level of maternal permissiveness, perceived level of maternal authoritarianism, perceived level of maternal authoritativeness, perceived level of paternal permissiveness, perceived level of paternal authoritarianism, perceived level of paternal authoritativeness, and perceived level of interparental conflict post divorce as independent variables.

The regression coefficient (R^2) provides information regarding the direction of the relationship between the dependent variable and each independent variable. A positive coefficient indicates that an increase in the independent variable results in an increase in the dependent variable. A negative coefficient indicates that an increase in the independent variable results in a decrease in the dependent variable. The absolute value of the regression coefficient provides information regarding the degree to which a change in the independent variable affects a change in the dependent variable.

For the purposes of determining levels of statistical significance, a Type I error rate of .05 was established. A decision to accept or reject the specific null research hypothesis was based on this predetermined attained significance level. Source data were rounded to the nearest hundredth.

Post hoc analyses were conducted to determine possible mediating effects. Two models were created to investigate whether the mediating effects existed for two dependent variables: paternal nurturance and paternal authoritativeness. In the model investigating mediating effects for paternal nurturance, the independent variables were level of paternal permissiveness, level of paternal authoritativeness, level of paternal authoritarianism, gender, age at time of parental divorce, and level of interparental conflict (see Table 9). The independent variables in the model investigating mediating effects for paternal authoritativeness included: level of paternal nurturance, gender, age at

time of parental divorce, level of paternal authoritarianism, level of paternal permissiveness, and level of interparental conflict (see Table 10). Table 8 describes the specific variables for the regression models in this investigation.

The goal of regression analysis was to determine what, if any, relationship existed between the set of predictor variables and the dependent variable (i.e., cognitive hardiness); and what, if any, relationships existed between an independent variable and the dependent variable when the effects for all of the other variables were controlled. Gender, age at time of parental divorce, the level of nurturance of the mother, the level of nurturance of the father, the style of maternal authority, the style of paternal authority, and the level of post divorce interparental divorce comprised the independent variables in the regression analysis. The output variable was the level of cognitive hardiness. The main effects equation was significant ($F=3.162$, $p>F=.001$) with this model accounting for 27% ($R^2=.266$) of the variance in the level of cognitive hardiness. Table 8 shows the sources of variance in the model.

This investigation was also designed to examine what, if any, relationships existed between each independent variable and the dependent variable when the effects for all of the other variables were controlled. Two variables were found to contribute significantly to cognitive hardiness scores on the CNS. The variables found to have attained significance were level of paternal nurturance ($t = 5.275$, $p<.05$) and paternal authoritativeness ($t = -3.693$, $p<.05$). None of the other independent variables were found to contribute significantly to the dependent measure.

Evidence regarding the strength and direction of the relationship between the independent variable and the dependent variable is provided by examination of the

Table 8

Source Table to Test the Main Effects with CHS as Dependent Variable

Source	df	Coefficient Estimate	Standard Error of Estimate	t-value	p-value
Gender	1	.357	2.167	.163	.871
Age at parental divorce	1	-8.738E-02	.191	-.458	.648
Parental nurturance					
Maternal nurturance	1	4.437E-02	.067	.665	.507
Paternal nurturance	1	.308	.058	5.275	.000*
Parental authority style					
Maternal permissiveness	1	-7.188E-02	.210	-.343	.732
Maternal authoritarianism	1	3.971E-02	.191	.208	.836
Maternal authoritativeness	1	.235	.198	1.188	.238
Paternal permissiveness	1	-8.020E-02	.195	-.411	.682
Paternal authoritarianism	1	.161	.193	.832	.408
Paternal authoritativeness	1	-.756	.205	-3.693	.000*
Interparental conflict	1	1.979E-02	.026	.773	.441

*p<.05; n=110

regression coefficients. The results in Table 8 indicate that scores on the paternal version of the PNS were positively associated with the level of cognitive hardiness measured by the CHS. In other words, for every 1-point increase in the level of paternal nurturance

measured by the PNS there was a resultant increase of .31 of a point on the CHS. In contrast, the relationship between the level of paternal authoritativeness and the CHS score was negative in direction. For every 1-point increase in level of paternal authoritativeness, there was a resultant decrease of .756 in CHS score. However, examination of the t-values of each of these variables supports a slightly stronger association between paternal nurturance and cognitive hardiness ($t = 5.275$), as compared to the relationship between paternal authoritativeness and cognitive hardiness ($t = -3.693$) (see Table 8).

Since paternal nurturance and paternal authoritativeness were found to be significant in the initial regression equation (see Table 8), post hoc analyses were conducted to determine possible mediating effects among the predictor variables. For these analyses, two separate regression models were created. In the first model (see Table 9), the dependent measure was the paternal nurturance score on the PNS and the independent variables included in the regression equation were: paternal permissiveness, paternal authoritarianism, paternal authoritativeness, interparental conflict, gender, and age at time of parental divorce.

For this model investigating indirect effects with paternal nurturance as the dependent variable, the main effects equation was significant ($F = 18.951$, $p < .05$) with this equation accounting for 53% ($R^2 = .530$) of the variance in the level of paternal nurturance. Table 9 shows the sources of variance in the regression model. Two variables were found to be significant at the $p < .05$ level. Both paternal authoritativeness ($t = 8.372$, $p < .05$) and paternal authoritarianism ($t = -2.156$, $p < .05$) contributed substantially to the level of paternal nurturance reported on the PNS. None of the

remaining independent variables in the equation were found to have a significant direct effect on the dependent variable, paternal nurturance.

Evidence regarding the strength and direction of the relationship between an independent variable and the dependent variable is provided by examination of the regression coefficients (R^2). The results in Table 9 indicate that the level of paternal nurturance measured by the PNS was significantly affected by two of the independent variables: paternal authoritarianism and paternal authoritativeness. The relationship between paternal authoritativeness and paternal nurturance was found to be positive in direction. In other words, for every 1-point increase in the level of paternal authoritativeness measured by the PAQ, there was a resultant increase of 2.176 of a point in the level of parental nurturance reported on the PNS. A direct effect of paternal authoritativeness was previously established by the regression equation in which cognitive hardiness was the dependent measure. Therefore, results of the post hoc analyses provide evidence that the level of paternal authoritativeness also has an indirect positive effect on the cognitive hardiness as a result of its statistically significant positive effect on the level of paternal nurturance. Results of the regression model for the set of predictor variables supported a significant positive relationship between the level of paternal nurturance and the level of cognitive hardiness (Table 9).

In this same regression model, the relationship between the level of paternal authoritarianism and the paternal nurturance score was also found to be significant, however, this relationship was negative in direction. For every 1-point increase in level of paternal authoritarianism, there was a resultant decrease of .672 of a point in the paternal nurturance score of the PNS. Therefore, the results of this analysis reflect an

indirect effect of paternal authoritarianism on cognitive hardness, since paternal nurturance was found to significantly contribute to the dependent measure, cognitive hardness, in the original research model (Table 8). However, examination of the t-values in the regression analysis provides evidence that the relationship between paternal authoritarianism and paternal nurturance ($t = 8.372$) is stronger in magnitude than the association between paternal authoritarianism and paternal nurturance ($t = -2.156$).

The dependent variable for the second regression model used in post hoc analyses was paternal authoritarianism as measured by the PAQ. The independent variables included in the regression equation were: paternal nurturance, interparental conflict, gender, and age at time of parental divorce. The main effects equation was significant ($F = 25.525$, $p < .05$) with this model accounting for 50% ($R^2 = .498$) of the variance in the level of paternal authoritarianism. Table 10 shows the sources of variance in the model. Paternal nurturance contributed substantially ($t = 9.366$, $p < .05$) to the level of paternal authoritarianism reported on the PAQ. None of the remaining independent variables in the equation were found to have a significant direct effect on the dependent variable of paternal authoritarianism.

A direct effect of paternal nurturance was previously established by the regression equation in which cognitive hardness was the dependent measure. Therefore, results of the post hoc analyses are inconsistent with the findings of the initial regression analysis that provided evidence of a significant negative relationship between paternal authoritarianism and cognitive hardness.

Table 9

Source Table for the Model to Test the Indirect Effects with Paternal Nurturance as Dependent Variable

Source	df	Coefficient Estimate	Standard Error of Estimate	t-value	p-value
Gender	1	1.657	3.789	.437	.663
Age at parental divorce	1	.265	.325	.817	.416
Interparental conflict	1	-4.376E-02	.042	-1.052	.295
Paternal permissiveness	1	-0.451	.313	-1.443	.152
Paternal authoritarianism	1	-0.672	.312	-2.156	.033*
Paternal authoritativeness	1	2.176	.260	8.372	.000*

p<.05; n=110

Table 10

Source Table for the Model to Test the Indirect Effects with Paternal Authoritativeness as Dependent Variable

Source	df	Coefficient Estimate	Standard Error of Estimate	t-value	p-value
Gender	1	-8.320E-02	1.103	-.075	.940
Age at parental divorce	1	4.083E-.02	.084	.437	.663
Interparental conflict	1	9.735E-02	.012	-.808	.421
Paternal nurturance	1	.196	.021	9.366	.000*

p<.05; n=110

Hypothesis Testing

Twelve hypotheses were evaluated to test the theoretical assumptions of this research. A linear regression model was developed and tested for statistical significance. The results for each hypothesis are described in the following paragraphs and summarized in Table 12.

Hypothesis 1 asserted that there is no significant association between the level of cognitive hardness reported by young adult children of divorce and gender. The results of the correlational analysis did not demonstrate a statistically significant association between gender and the level of cognitive hardness reported by young adult children of divorce. Therefore, no statistical evidence existed to reject the null hypothesis.

Hypothesis 2 stated that there is no significant association between the level of cognitive hardness reported by young adult children of divorce and age at time of biological parents' divorce. The results of the correlational analysis did not demonstrate a statistically significant association between age at time of biological parents' divorce and the level of cognitive hardness.

Table 15

Results of Hypothesis Testing

Number	Hypothesis	Decision
H ₁	There is no significant association between the level of cognitive hardness reported by young adult children of divorce and gender.	Fail to Reject
H ₂	There is no significant association between the level of cognitive hardness reported by young adult children of divorce and age at time of biological parents' divorce.	Fail to Reject

Results of Hypothesis Testing

Number	Hypothesis	Decision
H ₃	There is no significant association between the level of cognitive hardiness and the level of maternal nurturance reported by young adult children of divorce.	Reject
H ₄	There is no significant association between the level of cognitive hardiness and the level of paternal nurturance reported by young adult children of divorce.	Reject
H ₅	There is no significant association between the level of cognitive hardiness and the level of maternal permissiveness reported by young adult children of divorce.	Fail to Reject
H ₆	There is no significant association between the level of cognitive hardiness and the level of maternal authoritativeness reported by young adult children of divorce.	Fail to Reject
H ₇	There is no significant association between the level of cognitive hardiness and the level of maternal authoritarianism reported by young adult children of divorce.	Fail to Reject
H ₈	There is no significant association between the level of cognitive hardiness and the level of paternal permissiveness reported by young adult children of divorce.	Fail to Reject
H ₉	There is no significant association between the level of cognitive hardiness and the level of paternal authoritativeness reported by young adult children of divorce.	Fail to Reject
H ₁₀	There is no significant association between the level of cognitive hardiness and the level of paternal authoritarianism reported by young adult children of divorce.	Fail to Reject
H ₁₁	There is no significant association between the level of cognitive hardiness and the post divorce level of interparental conflict reported by young adult children of divorce.	Fail to Reject

Results of Hypothesis Testing

Number	Hypothesis	Decision
H ₁₂	There is no significant contribution of the variables (i.e., gender, age at time of biological parents' divorce, perceived level of maternal and paternal nurturance, perceived level of maternal and paternal permissiveness, perceived level of maternal and paternal authoritarianism, perceived level of maternal and paternal authoritarianism, and perceived level of post divorce interparental conflict) to the prediction of the level of cognitive hardness of young adult children of divorce.	Reject

Hypothesis 3 asserted that there is no significant association between the level of cognitive hardness and the level of maternal nurturance reported by young adult children of divorce. The results of the correlational analysis demonstrated a statistically significant association between the level of maternal nurturance and the level of cognitive hardness reported by young adult children of divorce ($r^2 = .20, p < .05$). Data from the study supported the rejection of the null hypothesis.

Hypothesis 4 stated that there is no significant association between the level of cognitive hardness and the level of paternal nurturance reported by young adult children of divorce. The results of the correlational analysis supported a statistically significant association between the level of paternal nurturance and the level of cognitive hardness reported by young adult children of divorce ($r^2 = .35, p < .01$). Data from the study supported the rejection of the null hypothesis 2.

Hypothesis 5 asserted that there is no significant association between the level of cognitive hardness and the level of maternal permissiveness reported by young adult

children of divorce. The results of the correlational analysis did not demonstrate a statistically significant association between the level of maternal permissiveness and the level of cognitive hardiness reported by young adult children of divorce. Therefore, no statistical evidence existed to reject the null hypothesis.

Hypothesis 6 stated that there is no significant association between the level of cognitive hardiness and the level of maternal authoritativeness reported by young adult children of divorce. The results of the correlational analysis did not demonstrate a statistically significant association between the level of maternal authoritativeness and the level of cognitive hardiness reported by young adult children of divorce. Therefore, no statistical evidence existed to reject the null hypothesis.

Hypothesis 7 asserted that there is no significant association between the level of cognitive hardiness and the level of maternal authoritarianism reported by young adult children of divorce. The results of the correlational analysis did not demonstrate a statistically significant association between the level of maternal authoritarianism and the level of cognitive hardiness reported by young adult children of divorce. Therefore, no statistical evidence existed to reject the null hypothesis.

Hypothesis 8 stated that there is no significant association between the level of cognitive hardiness and the level of paternal permissiveness reported by young adult children of divorce. The results of the correlational analysis did not demonstrate a statistically significant association between the level of paternal permissiveness and the level of cognitive hardiness reported by young adult children of divorce. Therefore, no statistical evidence existed to reject the null hypothesis.

Hypothesis 9 asserted there is no significant association between the level of cognitive hardiness and the level of paternal authoritativeness reported by young adult children of divorce. The results of the correlational analysis did not demonstrate a statistically significant association between the level of paternal authoritativeness and the level of cognitive hardiness reported by young adult children of divorce. Therefore, no statistical evidence existed to reject the null hypothesis.

Hypothesis 10 stated that there is no significant association between the level of cognitive hardiness and the level of paternal authoritarianism reported by young adult children of divorce. The results of the correlational analysis did not demonstrate a statistically significant association between the level of paternal authoritarianism and the level of cognitive hardiness reported by young adult children of divorce. Therefore, no statistical evidence existed to reject the null hypothesis.

Hypothesis 11 asserted that there is no significant association between the level of cognitive hardiness and the post divorce level of interparental conflict reported by young adult children of divorce. The results of the correlational analysis did not demonstrate a statistically significant association between the level of interparental conflict and the level of cognitive hardiness reported by young adult children of divorce. Therefore, no statistical evidence existed to reject the null hypothesis.

Hypothesis 12 stated that there is no significant contribution of the variables (i.e., gender, age at time of biological parents' divorce, perceived level of maternal and paternal nurturance, perceived level of maternal and paternal permissiveness, perceived level of maternal and paternal authoritativeness, perceived level of maternal and paternal authoritarianism, and perceived level of post divorce interparental conflict) to the

prediction of the level of cognitive hardness of young adult children of divorce. The results of the regression model provide evidence of a statistically significant association between the set of predictor variables ($F=3.162$, $p>F=.001$) and the level of cognitive hardness reported by young adult children of divorce. The predictor set of variables accounted for 27% ($R^2 = .266$) of the variance in the level of cognitive hardness in young adult children of divorce. Data from the study supported the rejection of the null hypothesis 12.

Two paternal variables reached significance in the regression analysis—nurturance and authoritativeness (see Table 8). In regard to paternal nurturance, evidence was found of a statistically significant association between the level of paternal nurturance ($t=5.275$, $p<.05$) and the level of cognitive hardness reported by young adult children of divorce. The regression estimate for paternal nurturance (.308) suggested a positive relationship existed such that for every 1-point increase on the paternal version of the PNS, a resultant increase of .31 of a point on the CHS can be expected. Secondly, the results of the regression analysis provide evidence of a statistically significant association between the level paternal authoritativeness and the level of cognitive hardness reported by young adult children of divorce. This finding was consistent with the significant positive relationship between paternal nurturance and cognitive hardness identified in the correlationalal analysis (see Table 7).

Evidence of a significant relationship between paternal authoritativeness and cognitive hardness was also found on examination of the results of the regression analysis. In addition, the regression estimate for paternal authoritativeness (-.756) suggested an inverse relationship existed such that for every 1-point increase on the

paternal version of the PNS, a resultant decrease of .76 of a point on the CHS can be expected. However, the correlational analysis not only failed to identify a significant relationship between paternal authoritativeness and cognitive hardness, but the association that was identified between these two variables was positive ($r = .05$) and very close to a zero correlation (see Table 7).

Post hoc analyses were conducted to investigate possible mediating effects among the predictor variables. For the model investigating possible mediating effects of several independent variables (i.e., different paternal parenting styles, gender, age at time of parental divorce, and level of interparental conflict) on paternal nurturance, two significant mediating effects were identified. The results of the post hoc regression analysis provided evidence of a significant association between (a) the level of paternal authoritarianism and the level of paternal nurturance ($t=-2.156$, $p<.05$), and (b) the level of paternal authoritativeness and the level of paternal nurturance ($t=8.372$, $p<.05$).

For the level of paternal authoritarianism, the regression estimate (-.672) suggested an inverse relationship existed such that for every 1-point increase in the level of paternal authoritarianism assessed by the PAQ, a resultant decrease of .67 of a point in the level of parental nurturance on the PNS can be expected. Therefore, results of the post hoc analysis provide evidence that the level of paternal authoritativeness also has an indirect positive effect on the cognitive hardness as a result of its statistically significant positive effect on the level of paternal nurturance. Results of the initial regression model for the set of predictor variables supported a significant positive relationship between the level of paternal nurturance and the cognitive hardness.

CHAPTER 5 DISCUSSION

Overview of the Study

The purpose of this study was to assess the influences of eleven variables on the level of cognitive hardiness in young adult children of divorce. The eleven variables examined were (a) gender, (b) age at time of parental divorce, (c) level of nurturance of the mother, (d) level of nurturance of the father, (e) level of maternal authoritativeness, (f) level of maternal permissiveness, (g) level of maternal authoritarianism, (h) level of paternal authoritativeness, (i) level of paternal permissiveness, (j) level of paternal authoritarianism, and (l) level of post divorce interparental conflict.

Research Sample

A total of 110 undergraduate college students drawn from 3 different colleges participated in the study. The study sample consisted of 35 males (32%) and 75 females (68%). Two-thirds of the sample was Caucasian (62%); the remaining sample was 17% Black, 14.5% Hispanic, 4.5% Asian, and the remaining 2% were grouped together as "Other." The sample ranged in age from 18 to 25 years in compliance with the criteria for inclusion in the study, and the mean age was 21 years. Slightly over two-thirds of the sample were attending a 4-year college (69%), while the remaining participants attended a 2-year community college (31%); the mean GPA was 3.1. The study participants reported that the mean level of education of both their mothers and fathers was completion of junior college. Most participants (78%) reported living primarily with

their mothers after their parents' divorce, while 14% reported living primarily with their fathers and 9% reported living equal amounts of time with each parent. The mean age at which a parental divorce occurred was 8 years.

Association Between Cognitive Hardiness and Gender

Hypothesis 1 stated that there was no significant association between the level of cognitive hardiness reported by young adult children of divorce and gender. The results of this research did not support the rejection of this hypothesis. Consensus is lacking in the hardiness literature in regard to the relationship between hardiness and gender. A persistent criticism of the hardiness research conducted by Kobasa and her colleagues (Kobasa 1979, Kobasa et al. 1981, Maddi & Kobasa 1984) was its reliance on samples comprised of White male executives. While one study of cognitive hardiness found significant differences in cognitive hardiness by gender (Nowack 1988), most studies have failed to find significant associations between cognitive hardiness and gender (Greene & Nowack 1995, Nowack, 1986, 1991, 1990). Consensus exists among researchers conducting longitudinal studies that gender differences among children of divorce fail to persist into young adulthood (Amato 1988, Chase-Lansdale et al. 1995, Furstenberg & Teitler 1994, Mechanic & Hansell 1989, Weiner et al. 1995).

In their theoretical framework of the development of hardiness, Maddi and Kobasa (1984) neglect to explore the relationship between gender and hardiness. Instead, the salience of family atmosphere and parent-child interactions that contribute to the development of hardiness in offspring are emphasized. A possible explanation for their failure to explore the association between gender and the development of hardiness is a lack of empirical data to substantiate the development of their hardiness theory. Instead,

Maddi and Kobasa (1984) formulated their theory based on interviews with male executives, clinical experience, and research findings of other psychological studies.

Association Between Cognitive Hardiness and Age at Time of Parents' Divorce

Hypothesis 2 stated that there was no significant association between the level of cognitive hardness reported by young adult children of divorce and age at time of parental divorce. The results of this research did not support the rejection of this hypothesis. While consensus is lacking in the divorce literature in regard to the salience of age at time of parental divorce among young adult children of divorce, most studies reviewed fail to provide evidence of significant differences between young adult children of divorce in relation to an individual's age when their parents divorced. The results of this study are consistent with previous research on young adult children of divorce that fail to identify significant associations between the timing of parental divorce and outcome measures (Bolgar et al. 1995, Furstenberg & Teitler 1994, Schmidtgall et al. 2000, Weiner et al. 1995).

The mean age at time of parental divorce for the sample in this study was 8 years, and the standard deviation was 5.51. While consensus exists among studies concerning of significant association between age at time of parental divorce and outcome measures for young adult children of divorce (Bolgar et al. 1995, Furstenberg & Teitler 1994, Schmidtgall et al. 2000, Weiner et al. 1995), only one of these studies identified the mean age at time of parental divorce and the standard deviation for their sample. In their investigation of the psychological adjustment of college students from families of divorce, Weiner and her colleagues (1995) identified a mean age at the time of parental divorce of 9 years and a standard deviation of 5.26 for their sample of 90 undergraduates.

These descriptive statistics are very similar to those identified for the sample in the current study.

Association Between Cognitive Hardiness and Maternal Nurturance

Hypothesis 3 stated that there is no significant association between the level of cognitive hardiness reported by young adult children of divorce and maternal nurturance. The results of this research supported the rejection of this hypothesis. That is, there was statistical evidence to support the concept that maternal nurturance significantly influenced cognitive hardiness scores reported by young adult children of divorce. A positive relationship between the level of maternal nurturance scores and cognitive hardiness scores was substantiated by the correlational analysis ($r = .20$; $p < .05$). In other words, the greater the level of maternal nurturance, the higher the cognitive hardiness scores reported by young adult children of divorce. However, it is notable that the strength of association ($r = .20$) between maternal nurturance scores and cognitive hardiness scores identified by the correlational analysis was weak (Huck et al. 1974). Nevertheless, the finding of a significant relationship between maternal nurturance and cognitive hardiness is consistent with Maddi and Kobasa's hardiness theory (1984), and Weiss' (1979, 1991) theory of the structure and functioning of single-parent households created by divorce.

Maddi and Kobasa (1984) emphasized the salience of the quality of parent-child interactions and family atmosphere in the development of hardiness in offspring. Parental support, encouragement, approval, and warmth are components of parental nurturance identified by Maddi and Kobasa (1984) that contribute to the development of the constructs of hardiness (i.e., commitment, control, and challenge) in children and

adolescents. These parental behaviors and attitudes are similar to the aspects of maternal nurturance that the PNS measured.

The development of a sense of commitment to self and environment, the first component of hardness identified by Maddi and Kobasa (1984), results from the overall degree to which parent-child interactions were characterized by parental support and acceptance. According to hardness theory, if a child's attempts to meet their needs (e.g., for safety and love) and potentialities (e.g., for intellectual or artistic ability) are met with approval, interest, and encouragement, the likelihood that they will develop the perception that their world and their self-concept are interesting and worthwhile increases. This positive disposition towards oneself and one's environment constitutes an individual's sense of commitment.

The second component of hardness, a sense of control, refers to a child's perception that they are not only able to influence their world but are willing to act on that belief. Maddi and Kobasa (1984) suggest that parents who provide their children with moderately difficult physical and mental tasks to master (e.g., household chores, cleaning and dressing oneself, attempting homework without parental assistance) encourage a sense of independence and mastery in their offspring. Lastly, hardness is comprised of a sense of challenge, or the perception that life changes are signs of "richness and possibility" (Maddi & Kobasa 1984). Parents promote the development of this disposition by encouraging their offspring to use their mental capabilities to view challenges as richness and opportunity, in contrast to chaos and threats.

The most salient aspect of Maddi and Kobasa's (1984) theory of the development of hardness in children and adolescents is its emphasis on the quality of parent-child

interactions. Nurturing parental behaviors and attitudes directed toward offspring are hypothesized to be the most significant positive influence on the development of hardness in children and adolescents. Therefore, given that the majority (78%) of young adult child of divorce in this sample resided with their custodial mothers for more than half of their childhood and adolescence, it was expected that a significant and positive relationship would be identified between maternal nurturance and the level of cognitive hardness reported by participants.

The significant finding of a positive relationship between maternal nurturance and cognitive hardness in this study is consistent with the results of other investigations of the relationship between maternal nurturance and other measures of personality strengths (e.g., self-esteem) and adjustment among young adult children of divorce (Arditti 1999, Evans & Bloom 1996, Hess & Camerer 1979, Maccoby et al. 1993, Wallerstein & Corbin 1989, Zill et al. 1993).

Furthermore, Weiss (1979, 1991) purports that, as a result of decreased social distance in single-parent households, the opportunity is created for parent-child relationships to experience greater equality, more frequent interaction, and increased cohesiveness (i.e., heightened intimacy and companionship). Overall, the mean level of maternal nurturance (97.75) reported by young adult children of divorce was higher than the mean level of paternal nurturance (88.4) reported in this study. Given that the mean level of maternal nurturance reported by participants in this study was higher than the level of paternal nurturance, and 78% of the sample resided with their mothers for more than half of their childhood and adolescence, a significant positive relationship between maternal nurturance and cognitive hardness was expected. While this association

reached significance in the correlational analysis, it was not anticipated that the strength of association between paternal nurturance and cognitive hardness in young adult children of divorce ($r = .35$) would be almost twice the magnitude of the relationship between maternal nurturance and cognitive hardness ($r = .20$) (see Table 7).

Association Between Cognitive Hardiness and Paternal Nurturance

Hypothesis 4 stated that there is no significant association between the level of cognitive hardness reported by young adult children of divorce and paternal nurturance. The results of this research supported the rejection of this hypothesis. That is, there was statistical evidence to support the concept that paternal nurturance significantly influenced cognitive hardness scores reported by young adult children of divorce. A positive relationship between the level of paternal nurturance and cognitive hardness scores reported by young adult children of divorce was substantiated by the correlational analysis ($r = .35$; $p < .01$). This means that the greater the level of paternal nurturance, the higher the cognitive hardness scores for young adult children of divorce.

This finding is consistent with Maddi and Kobasa's (1984) hardiness theory that emphasized the salience of the quality of parent-child interactions and family atmosphere in the development of hardness in offspring. As was discussed previously, parental support, encouragement, approval, and warmth are components of parental nurturance identified by Maddi and Kobasa (1984) that contribute to the development of the constructs of hardness (i.e., commitment, control, and challenge) in children and adolescents.

The finding of a significant relationship between paternal nurturance and the level of cognitive hardness reported by young adult children of divorce is particularly notable

in a context of divorce. Despite the fact that the majority (78%) of young adult child of divorce in this sample resided with their custodial mothers for more than half of their childhood and adolescence, the strength of the relationship between paternal nurturance and cognitive hardness ($r = .35$; $p < .01$) was of greater magnitude than the association between maternal nurturance and cognitive hardness ($r = .20$; $p < .05$) (see Table 7) in the correlational analysis. This association is of particular interest, as the overall mean level of paternal nurturance (88.4) reported by young adult children of divorce in this study was lower than the mean level of maternal nurturance (97.75). In addition, the relationship between paternal nurturance and cognitive hardness reached significance in the regression analysis, while the relationship between maternal nurturance and cognitive hardness did not.

While the finding of a significant and positive relationship between paternal nurturance and cognitive hardness is consistent with past research on young adults, most of these previous studies relied on samples of young adults from intact families. Paternal nurturance has been shown to have a significant and positive association with personality strengths and characteristics of young adults: self-esteem (Buri 1989, Buri et al. 1987, 1992, Pawlek & Klein 1997, Watson et al. 1995), and psychological adjustment (Weiner et al. 1995). Unfortunately, four of these six studies of the relationship between paternal nurturance and personality strengths or adjustment of young adults eliminated young adults whose parents were divorced from participating in the research (Buri 1989, Buri et al. 1987, 1992, Pawlek & Klein 1997).

However, in their study investigating predictors of adjustment to college in a sample of undergraduates from divorced families, Weiner et al. (1995) found evidence of

a significant and positive relationship between two dimensions of paternal nurturance and adjustment of young adults. These were the only parental variables to reach significance in the multiple regression analysis; the maternal variables did not attain significance. The results Weiner et al.'s (1995) investigation are similar to the findings of this study that substantiate a significant positive relationship between paternal nurturance and cognitive hardiness in a context of divorce.

Perhaps the significant positive influence of paternal nurturance on the development of cognitive hardiness in young adult children of divorce in this study can be attributed to the presence of cognitive hardiness in noncustodial fathers. Maintaining a nurturing relationship with offspring after divorce is particularly challenging for noncustodial parents. Given that most (78%) of the young adult children of divorce in this study resided for more than half of their lives with their mothers, fathers of participants in this study would have been challenged to provide nurturance to their offspring given the potential for numerous obstacles (e.g., time since the divorce, remarriage, children from another marriage, continued conflict with the custodial parent, developmental changes in offspring, financial challenges when offspring no longer resided in the same city as the noncustodial father). Offspring of divorce may have an awareness of the tremendous effort and commitment required of noncustodial fathers to provide nurturance to their offspring when they no longer share a residence with their children. As a result, paternal nurturance may be a more salient influence on the development of the constructs of hardiness in offspring (i.e., control, commitment, and challenge) in a context of divorce.

Paternal authority style and paternal nurturance. Post hoc analyses were conducted to determine possible associations between paternal nurturance and paternal authority style. The results of these analyses revealed that paternal nurturance had a statistically significant positive effect on paternal authoritativeness ($p < .01$). This means that as the level of paternal nurturance increased so did the level of paternal authoritativeness. However, this finding is inconsistent with the results of the regression analysis that supported a positive relationship between paternal nurturance and cognitive hardiness, and a negative relationship between paternal authoritativeness and cognitive hardiness. Both of these associations attained significance in the initial regression analysis (see Table 8). It appears that one or more of the assumptions of the initial regression may have affected the significance tests, as these results are inconsistent with each other.

Post hoc analyses also revealed that paternal nurturance had a statistically significant inverse effect on paternal authoritarianism. In other words, as the level of paternal nurturance increased there was a resultant decrease in the level of paternal authoritarianism. However, paternal authoritarianism was not significantly associated with cognitive hardiness. Therefore, no indirect effect between paternal nurturance and cognitive hardiness was supported through the association between paternal authoritarianism and paternal nurturance.

Association Between Cognitive Hardiness and Maternal Permissiveness

Hypothesis 5 stated that there is no significant association between the level of cognitive hardiness reported by young adult children of divorce and maternal permissiveness. The results of this research did not support the rejection of this

hypothesis. Baumrind (1971) describes permissive parents as relatively non-controlling in their interactions with their children, and using a minimum of punishment in disciplining their children. These parents make fewer demands on their children than other parents, and give their children as much control as possible over their own activities. In addition, Baumrind (1971) conceptualizes parents who demonstrate a permissive authority style as parents as providing less nurturance in comparison to parents who demonstrate an authoritative parenting style.

The lack of significance between maternal permissiveness and cognitive hardiness found in this study is consistent with Maddi and Kobasa's (1984) hardiness theory. They emphasized the salience of the quality of parent-child interactions and family atmosphere in the development of hardiness in offspring. Parental support, encouragement, approval, and warmth are components of parental nurturance identified by Maddi and Kobasa (1984) that contribute to the development of the constructs of hardiness (i.e., control, commitment, and challenge) in children and adolescents. Therefore, the negative association between maternal permissiveness and cognitive hardiness identified in the correlational analysis was in the expected direction ($r = -.05$), however this relationship failed to attain significance. In addition, the relationship between maternal permissiveness and cognitive hardiness could be more accurately described as a lack of relationship, as the correlation coefficient is very close to zero. However, the results of this study are consistent with previous studies that provide evidence of a negative relationship between a permissive parenting style and personality strengths or positive outcomes in young adults (Baumrind 1971, Buri 1989, Buri et al. 1988, Wintre & Sugar 2000) that fails to reach significance.

Association Between Cognitive Hardiness and Maternal Authoritativeness

Hypothesis 6 stated that there is no significant association between the level of cognitive hardiness reported by young adult children of divorce and maternal authoritativeness. The results of this research did not support the rejection of this hypothesis. The lack of significance in predicting cognitive hardiness in young adult children was unexpected from both a theoretical standpoint, as well as in a context of the literature on parenting style. First of all, the findings are inconsistent with both of the theoretical frameworks guiding this research. Maddi and Kobasa (1984) describe a parenting style that describes provision of tasks that are of moderate difficulty so that offspring can (a) gain a sense of mastery, (b) learn that they can influence outcomes, and (c) acquire a sense of competency through their perseverance. In addition, they identify the salience of "parental warmth and support of youngsters' efforts to perform tasks, express individuality, and construe the variation as richness and possibility" (p. 257). In a similar theme, Baumrind (1971) describes an authoritative parenting style as providing clear and firm direction for one's children, and exercising authority in a warm, rational, flexible, bargaining style that encourages communication with one's children.

Weiss (1979) purports that the single-parent household headed by divorced mother creates the opportunity for (a) a more collaborative style of household management, (b) greater sharing of responsibilities by all family members, and (c) joint participation in decision making. Therefore, given that 78% of the sample lived with their mothers after their parents divorced, it was expected that maternal authoritativeness would significantly contribute to the level of cognitive hardiness in young adult children of divorce. While the positive association that was identified in the correlational analysis

between maternal authoritativeness and cognitive hardness reported by young adult children of divorce was in expected direction ($r = .15$), based on previous research and the theories guiding this research, it was expected that this relationship would reach significance. Instead, the positive association between maternal authoritativeness and cognitive hardness was very weak (Huck et al. 1974). In contrast, the findings from previous studies substantiate a significant direct relationship between parental authoritativeness and positive outcomes for young adults (Arditti 1999, Baumrind 1991, Gonzalez, Greenwood & WenHsu 2001, Hetherington 1989, Maccoby et al. 1991, Steinberg 1990, Steinberg et al. 1991).

Association Between Cognitive Hardiness and Maternal Authoritarianism

Hypothesis 7 stated that there is no significant association between the level of cognitive hardness reported by young adult children of divorce and maternal authoritarianism. The results of this research did not support the rejection of this hypothesis. Baumrind (1971) describes authoritarian parents as more dictatorial and directive in their authority style. The results of her research provide evidence that an authoritarian style of parenting is associated with low levels of responsiveness and emotional support toward offspring (Baumrind, 1971). Therefore, the lack of evidence of a positive relationship ($r = -.03$) between maternal authoritarianism and cognitive hardness in this study is consistent with Maddi and Kobasa's (1984) hardness theory. They emphasize the salience of parent-child interactions that are characterized by a high level of warmth and support in promoting the development of hardness in offspring are emphasized by Maddi and Kobasa (1984).

However, while a negative association between an authoritarian parenting style and cognitive hardness was expected, the correlation coefficient was almost zero ($r = -.03$) and could be more accurately described as a lack of association between maternal authoritarianism and cognitive hardness. Therefore, this finding was inconsistent with past research on young adults among which consensus exists in support of a negative relationship between maternal authoritarianism and personality strengths of young adults that reached significance (Buri 1989, Buri et al. 1988, Furnham & Cheng 2000).

Association Between Cognitive Hardiness and Paternal Permissiveness

Hypothesis 8 stated that there is no significant association between the level of cognitive hardness reported by young adult children of divorce and paternal permissiveness. The results of this research did not support the rejection of this hypothesis. Baumrind (1971) describes permissive parents as relatively non-controlling in their interactions with their children, and using a minimum of punishment in disciplining their children. These parents make fewer demands on their children than other parents, and give their children as much control as possible over their own activities. In addition, Baumrind (1971) conceptualizes parents who demonstrate a permissive authority style as parents as providing less nurturance in comparison to parents who demonstrate an authoritative parenting style.

The lack of significance between paternal permissiveness and cognitive hardness found in this study is consistent with Maddi and Kobasa's (1984) hardness theory. They emphasized the salience of the quality of parent-child interactions and family atmosphere in the development of hardness in offspring. Parental support, encouragement, approval,

and warmth are components of parental nurturance identified by Maddi and Kobasa (1984) that contribute to the development of the constructs of hardiness (i.e., commitment, control, and challenge) in children and adolescents. Therefore, the negative association between paternal permissiveness and cognitive hardiness parenting style identified in the correlational analysis was in the expected direction ($r = -.14$). However, this relationship failed to attain significance. Consistent with previous studies, the results of this study support negative relationship between a permissive parenting style and personality strengths or positive outcomes in young adults that fails to reach significance (Baumrind 1971, Buri 1989, Buri et al. 1988, Wintre & Sugar 2000).

Association Between Cognitive Hardiness and Paternal Authoritativeness

Hypothesis 9 stated that there is no significant association between the level of cognitive hardiness reported by young adult children of divorce and paternal authoritativeness. The results of this research did not support the rejection of this hypothesis. The lack of significance in predicting cognitive hardiness in young adult children was unexpected from a theoretical standpoint as well as in a context of the literature on parenting style. First of all, the findings are inconsistent with Maddi and Kobasa's (1984) hardiness theory. They purport that a parenting style that provides tasks of moderate difficulty encourages the development of hardiness in offspring. In addition, they identify the salience of "parental warmth and support of youngsters' efforts to perform tasks, express individuality, and construe the variation as richness and possibility" (p. 257).

In a similar theme, Baumrind (1971) describes an authoritative parenting style as providing clear and firm direction for one's children, and exercising authority in a warm,

rational, flexible, bargaining style that encourages communication with one's children. Therefore, it was expected that a significant and direct relationship between paternal authoritativeness and cognitive hardiness as reported by young adult children of divorce would be supported in this research. Instead, the correlational analysis identified the virtual lack of relationship between these two variables, as the correlation between paternal authoritativeness and cognitive hardiness was almost zero ($r = .05$). Even more unexpected were the results of the regression analysis that supported a negative relationship between paternal authoritativeness and cognitive hardiness that reached significance ($t = -3.693$; $p < .05$). That is, there was statistical evidence to support the notion that the level of paternal authoritativeness significantly influenced cognitive hardiness scores of young adult children of divorce in a negative direction. As the level of paternal authoritativeness increased, the level of cognitive hardiness in a young adult child of divorce decreased by .76 of a point.

The finding of a negative relationship between paternal authoritativeness and cognitive hardiness as a result of the regression analysis was not only inconsistent with the theoretical frameworks guiding this research, but also contradictory to the results of the correlational analysis. In addition, this finding was not consistent with most previous studies of paternal authoritativeness. Prior research supports a positive relationship between parental authoritativeness and positive outcomes for young adults (Baumrind 1991, Gonzalez, Greenwood & WenHsu 2001, Hetherington 1989, Maccoby et al. 1991, Steinberg 1990, Steinberg et al. 1991).

However, the results of the current research are similar to the findings of two previous studies. Flett and his colleagues (1995) found evidence of an unexpected

positive relationship between self-oriented perfectionism (i.e., the tendency to raise one's own goals and aspirations) and paternal authoritativeness that reached significance. These researchers were interested in the origins of perfectionism, as this personality trait has been associated with a plethora of negative outcomes for individuals (e.g., anxiety, depression, anorexia, depression, and suicide) (Flett et al. 1995). Wintre and Sugar (2000) investigated the relationship between parental authority style and adjustment to college. Their findings supported a significant negative relationship between paternal authoritativeness on females' perceived academic adjustment. Similar to the current study, a potential explanation of these unexpected findings could be the substantial positive correlations that were identified among the independent variables (Wintre & Sugar 2000).

Possible explanations for the unexpected finding of a relationship between paternal authoritativeness and cognitive hardiness include: (a) the presence of several outliers (i.e., extreme values) in the distribution of the residuals of the regression analysis, and (b) a Type I error occurred that resulted in the incorrect rejection of the null hypothesis. Examination of the scatterplot of the residuals confirmed that there were several outliers (i.e., extreme values) in the distribution. Therefore, a possible explanation for the unexpected negative association between paternal authoritativeness and the dependent variable (i.e., cognitive hardiness) identified in the regression analysis could be the presence of these outliers. Multiple regression is a type of analysis that is highly sensitive to outliers (Pallant, 2001).

Another possible explanation for the unexpected direction of the association between paternal authoritativeness and cognitive hardiness could be attributed to the

occurrence of a Type I error in the regression analysis. A Type I error occurs when the null hypothesis is incorrectly rejected (Pallant 2001, Polit 1996, Tabachnick & Fidell 2001). In other words, the hypothesis that there was no relationship between paternal authoritativeness and cognitive hardiness reported by young adult children of divorce could have been erroneously rejected based on the results of the regression analysis. In contrast, the null hypothesis was retained as a result of the correlational analysis because these findings did not support a significant relationship between paternal authoritativeness and cognitive hardiness. Therefore, the results of the regression analysis are inconsistent with the findings of the correlational analysis in regard to the null hypothesis that there was no relationship between these two variables (i.e., paternal authoritativeness and cognitive hardiness). The inconsistency between the findings of the correlational and regression analyses seems to support the possibility that a Type I error occurred in the regression analysis.

The regression equation included 11 independent variables, and it is possible that the number of independent variables may have increased the risk of a Type I error. Inclusion of too many potential predictor variables can reduce the utility of the regression equation (Polit 1996). One of the goals of regression analysis is to identify the smallest number of uncorrelated independent variables needed to predict a dependent variable (Tabachnick & Fidell 2001). Therefore, inclusion of a large set of independent variables in this study, almost all of which were not significantly correlated with the dependent variable but intercorrelated with each other, may have increased the risk of a Type I error.

Paternal nurturance and paternal authoritativeness. Post hoc analyses were conducted to determine possible associations between paternal authoritativeness and

paternal nurturance. The results of these analyses revealed that paternal authoritativeness had a statistically significant positive effect on paternal nurturance ($t=8.372$; $p<.05$) (see Table 9). This means that as the level of paternal authoritativeness increased there was a resultant increase the level of paternal nurturance. However, this finding is not consistent with the inverse relationship between paternal authoritativeness and cognitive hardiness identified in the initial regression model (see Table 8). Therefore, it seems likely the findings of the post hoc analysis provide further empirical evidence that the finding of a significant negative relationship between paternal authoritativeness and cognitive hardiness was the result of violation of one or more of the assumptions of the initial regression model.

Association Between Cognitive Hardiness and Paternal Authoritarianism

Hypothesis 10 stated that there is no significant association between the level of cognitive hardiness reported by young adult children of divorce and maternal authoritarianism. The results of this research did not support the rejection of this hypothesis. Baumrind (1971) describes authoritarian parents as more dictatorial and directive in their authority style. The results of her research provide evidence that an authoritarian style of parenting is associated with low levels of responsiveness and emotional support toward offspring (Baumrind 1971). Therefore, the finding of a positive relationship ($r = .05$) between paternal authoritarianism and cognitive hardiness in this study is inconsistent with Maddi and Kobasa's (1984) hardiness theory. They emphasize the salience of parent-child interactions characterized by a high level of warmth and support in promoting the development of hardiness in offspring are emphasized by Maddi and Kobasa (1984).

While a negative association between an authoritarian parenting style and cognitive hardness was expected, the correlation coefficient was almost zero ($r = .05$), and could be more accurately described as a lack of association between paternal authoritarianism cognitive hardness. Therefore, this finding was inconsistent with past research on young adults among which consensus exists in support of a negative relationship between paternal authoritarianism and personality strengths and characteristics of young adults that reached significance (Buri 1989, Buri et al. 1988, Furnham & Cheng 2000).

Association Between Cognitive Hardiness and Interparental Conflict

Hypothesis 11 stated that there is no significant association between the level of cognitive hardness reported by young adult children of divorce and interparental conflict. The results of this research did not support the rejection of this hypothesis. While the direction of the relationship between interparental conflict and cognitive hardness was in the expected direction ($r = -.06$), the relationship could be more accurately described as non-existent since the correlation coefficient was almost zero. Therefore, this finding was inconsistent with previous research on the effects of interparental conflict. Regardless of parents' marital status, exposure to high levels interparental conflict during childhood and adolescence has been associated with a plethora of psychological, emotional, behavioral, and interpersonal outcomes in young adults (Amato and Keith 1991a, Zill et al. 1993). Studies of self-esteem, psychological adjustment, and clinical symptomology in young adults provide evidence that the deleterious consequences of interparental conflict persist into young adulthood (Garber 1991, Mechanic & Hansell 1989, Nelson et al. 1993, Schmidtgall et al. 2000, Weiner et al. 1995).

One possible explanation for the lack of significant findings for post divorce interparental conflict as a predictor of cognitive hardness in young adult children of divorce could be attributed to the significant intercorrelations between post divorce interparental conflict and five of the other independent variables (see Table 7): maternal nurturance ($r = -.21$), paternal nurturance ($r = -.25$), maternal authoritarianism ($r = -.32$), paternal authoritarianism ($r = .22$), and paternal authoritativeness ($r = -.23$).

When two independent variables used in a regression are not independent but are correlated, statistical analyses are unable to sort out the independent effects of each variable (i.e., maternal nurturance and authoritarianism) on the dependent variable (i.e., hardness). When regression coefficients are estimated using correlated independent variables, the critical value of F required to reject the null hypothesis increases. As a result, the likelihood that the regression coefficients will not reach significance is increased and therefore the findings may be misleading (Polit 1996, Schroeder, Sjoquist, & Stephan 1986).

In addition, the mean post divorce interparental conflict score (66.92) reported on the PPCS were in this sample was significantly lower than those reported in two previous studies (i.e., 167.91 and 162.4) (Morris & West 2000, Sonnenblick & Schwarz 1995). Therefore, the significantly lower post divorce interparental conflict scores in this sample may be another possible explanation for the lack of significance in the relationship between interparental conflict and cognitive hardness in this sample.

Association Between Cognitive Hardiness and the Set of Predictor Variables

Hypothesis 12 stated that there is no significant association between the level of cognitive hardness reported by young adult children of divorce and the set of predictor

variables. The results of this research supported the rejection of this hypothesis. That is, there was statistical evidence to support the notion that the set of predictor variables (i.e., gender, age at time of parental divorce, maternal nurturance, paternal nurturance, maternal permissiveness, maternal authoritativeness, maternal authoritarianism, paternal permissiveness, paternal authoritativeness, paternal authoritarianism, and interparental conflict) significantly influenced cognitive hardiness scores as reported on the CHS. This set of predictor variables accounted for 27% ($R^2=.266$) of the variance in the level of hardiness.

Two variables within this set of predictor variables significantly influenced cognitive hardiness scores. Specifically, both paternal nurturance and paternal authoritativeness influenced cognitive hardiness. In regard to paternal nurturance, a statistically significant positive relationship was supported by the regression analysis. Conversely, a statistically significant inverse relationship between paternal authoritativeness and cognitive hardiness was supported by the regression analysis. In other words, the greater the level of paternal authoritativeness reported on the PAQ, the lower the cognitive hardiness score on the CHS. These findings have been discussed previously in this chapter.

Limitations of the Study

There were a number of limitations that characterized this research and may compromise the generalizability of findings. Limitations include the conceptualization of variables, selection of variables, instrumentation, sample selection, and data analysis, and are discussed further.

Conceptualization of variables

A limitation of this study may be the use of Baumrind's (1971) parental authority prototypes to explore the influence of parenting style on the development of cognitive hardiness. Baumrind conceptualizes these three parental authority styles to be distinct prototypes, as opposed to existing along the same continuum. However, similar to previous studies that used Baumrind's authority prototypes, a number of intercorrelations (i.e., -.56 to .18) were identified among the three parenting styles for each parent, several of which reached significance. For many participants in this study, examination of their individual scores for each of the three parental authority styles reveals only a slight difference among their scores for each parent. In other words, participants often failed to identify a particular parenting style that characterized the authority style that they observed in either their mother or father, as there were only slight differences in scores among the three parental authority styles. In addition, none of the three parenting styles for either parent reached significance in the correlational analysis in regard to their association with cognitive hardiness. Therefore, Baumrind's conceptualization of parental authority may not clearly distinguish one parental authority style from the other two, and this shared variance among parenting styles may have prevented the regression analysis from accurately assessing the influence of parenting style on the level of cognitive hardiness reported by young adult children of divorce.

Selection of variables

Exclusion of variables that might be more salient in predicting cognitive hardiness in young adult children of divorce was another limitation of this study. Only 27% of the variance in cognitive hardiness was accounted for by the regression equation, and

paternal and maternal nurturance accounted for 24% of this variance. In other words, when both paternal and maternal nurturance were excluded from the regression analysis, only 4% of the variance in cognitive hardiness was explained by the set of variables included in this study. As a result, 73% of the variance in cognitive hardiness was not accounted for by the variables included in this study.

Given the salience of paternal nurturance in this study in predicting cognitive hardiness and the significant amount of time that participants did not live in the same household with their fathers after their parents' divorce, another limitation of this research is exclusion of variables that related to visitation and contact with one's father after parental divorce (e.g., frequency of visitation with the noncustodial father, duration of visitation post divorce, number of changes in noncustodial father's marital status post divorce).

Finally, a central assumption of the research design was that positive outcomes would be identified in young adults who have experienced the divorce of their biological parents and spent some length of time living in a household headed by a single-parent. Therefore, bias was inherent in this study since the investigator was only examining the development of a personality strength, cognitive hardiness, and excluding other positive and negative dependent variables. Salient variables that may have explained the lack of significance of any of the maternal variables in the regression analysis were excluded because of the use of a resilience research perspective. In addition, variables that may have expanded understanding of the significance of paternal nurturance in contributing to the development of hardiness in young adult children of divorce were also excluded from this study.

Furthermore, investigating the perceptions of young adult children of divorce in regard to potentially negative aspects of living in a single-parent household headed by a divorced mother that Weiss (1979, 1994) identified were not included from this study. For example, the presence of boundary violations, task overload, or role reversals were not examined in this study. Therefore, bias toward positive aspects of single-parent households headed by divorced mothers may have resulted in salient variables being excluded from this investigation of the development of cognitive hardiness in young adult children of divorce.

Instruments

The findings of this research may have been limited as a result of the research instruments used in assessing the independent and dependent variables. Use of a standardized instrument for the evaluation of any construct is important, however, the selection of the CHS (Nowack 1989) may have presented some difficulties that were not initially apparent. The CHS was used in this research to measure the level of cognitive hardiness in a sample of young adult children of divorce between the ages of 18 and 25 years. However, no prior studies were located that used this instrument with a college-age population. Participants in all previous studies utilizing the CHS to assess cognitive hardiness were comprised of working professionals (Greene & Nowack 1995, Nowack 1985, 1989, 1990, 1991, Nowack & Pentkowski 1994). Furthermore, the CHS was modified to make it more applicable to population of college undergraduate students; seven statements were changed.

Unfortunately, the Cronbach's (1951) alpha reliability estimate for the revised CHS was .55, considerably lower than the .83 calculated in Nowack's (1989) original

research. As a result, the internal reliability of the revised instrument may have been significantly reduced, thereby compromising the findings of this research. Despite the low Cronbach's alpha for the revised CHS used in this study, the mean level of cognitive hardness reported by this sample and standard deviation were similar to the results of Nowack's (1990) initial development of the CHS. The mean level of cognitive hardness for his research sample was 97.32 and the standard deviation in CHS scores was 11.45. In comparison, the mean CHS score for the present study was slightly higher (99.45) than Nowack's findings, and the standard deviation was almost identical (11.13).

In addition, all of the instruments used in this research were self-report measures. Unfortunately, participants tend to complete self-report measures in a socially desirable manner (Cone & Foster, 1993). As a result, social desirability bias is inherent in research that obtains data from self-report instruments. Also, all of the measures of parental behaviors (i.e., parental nurturance, authority, and conflict) were obtained from offspring's perceptions, as opposed to objective observations. An example of a potential problem created by that of a subjective measure can be illustrated in the scenario of a young adult who is in an estranged relationship with one of their parents. This individual may tend to describe their perceptions of the parent's behavior in more pejorative terms as a result of the current status of the parent-child relationship. Therefore, another potential limitation of this study was its reliance on self-report instruments to assess all of the parental constructs used in the analysis.

Sample selection

Sampling issues may also limit the generalizability and validity of the findings of the proposed research. Undergraduate students at junior and 4-year colleges were

recruited to participate in this study. Inherent in this sample is bias towards young adult children who have the financial and academic ability to attend college. Excluded from this sample are young adult children of divorce who may have entered the workforce or military; taken time off between high school and attending college as a result of employment, family, or personal concerns; become employed in careers not requiring a college degree; been unable to obtain the financial support needed to attend college; and been unable to obtain emotional support from their family to pursue a college degree.

Data Analysis

While correlational analysis identified the strength and direction of association among variables, correlation coefficients do not provide sufficient information to imply causality (Huck et al., 1974). A high positive correlation does not imply that a causal relationship exists between the two variables because the relationship may be attributed to a third variable. Therefore a limitation of this research is its use of correlational analysis to test 11 of the 12 hypotheses.

A number of the independent variables were correlated with one another, and two of these correlations (i.e., paternal nurturance and paternal authoritativeness; maternal nurturance and maternal authoritativeness) reached .70, suggesting that multicollinearity may have occurred within the set of predictor variables. The minimum level of acceptable intercorrelation among independent variables in the regression equation varies from .70 to .85, depending on the researcher (Polit 1996, Tabachnick & Fidell 2001). SPSS 10.0 collinearity diagnostics were performed to investigate the possibility of multicollinearity in the set of independent variables. The tolerance levels were calculated to be between .386 and .956, suggesting that the assumption that the data set was not

characterized by multicollinearity was not violated. For multicollinearity to have been present, the tolerance values would have approached zero (Pallant 2001, Tabachnick & Fidell 2001). However, the assumption that the independent variables would demonstrate some level of association ($r > .30$) with the dependent variable was violated (Pallant 2001). Only one of the 11 predictor variables, paternal nurturance, was found to have a correlation ($r = .35$; $p < .01$) with the dependent variable (i.e., cognitive hardiness) that was above .30.

A test of the assumptions of normality, linearity, and homoscedasticity between predicted dependent variable scores (i.e., cognitive hardiness) and errors of prediction was provided through examination of the scatterplots of the residuals (Tabachnick & Fidell, 2001). The first assumption of regression analysis is that differences between obtained and predicted scores of the dependent variable, or residuals, are normally distributed around each predicted dependent variable score. When the assumption of normality is met, examination of the residuals scatterplot reveals that the residuals are concentrated in the center of the scatterplot such that for each for each value of the predicted score, the corresponding regression standardized residual has a value near zero (Polit 1996, Tabachnick & Fidell 2001). However, in this study, the residuals were not highly concentrated along a straight horizontal line in the center of the graph near the value of zero.

The assumption of linearity is that the relationship between the predicted dependent values and errors of prediction is linear. However examination of the scatterplot of the residuals in this study suggests that nonlinearity may characterize the relationship between the predicted dependent values of errors of prediction. The

residuals were not distributed in a rectangular form, as the shape observed in the scatterplot seemed to lack symmetry. Therefore, the assumption of linearity may have been violated. The last assumption, homoscedasticity, assumes that the standard deviations of errors of prediction are approximately the same for all predicted scores of the dependent variable (Polit 1996, Tabachnick & Fidell 2001). In other words, the band including all of the residuals on the scatterplot is approximately the same width for all predicted values of the dependent variable. Examination of the scatterplot of the residuals provides evidence that the band enclosing the residuals is not equal at all predicted dependent variable values, and therefore heteroscedasticity may have occurred. In this study, the errors of prediction seemed to slightly decrease as the size of the prediction increased.

The assumption of homoscedasticity can be violated when some of the variables are skewed while others are not (Tabachnick & Fidell 2001). In this study, the skewness of the distribution of scores of paternal authoritarianism was calculated to be -.412. This may be a possible explanation for the occurrence of heteroscedasticity. In addition, the Jarque-Bera test of normality for the distribution of the paternal authoritarianism scores was high (-33.18), and could imply that the assumption of normality may have been violated. Finally, the interaction of an independent variable with another variable that was not included in the regression analysis could also explain the heteroscedasticity in this scatterplot of the residuals (Tabachnick & Fidell 2001). Heteroscedasticity most often occurs in the analysis of cross-sectional data (Schroeder, Sjoquist, & Stephan 1986). Therefore, another potential limitation of this study is its cross-sectional research design.

The presence of several outlying residuals was observed on inspection of the residuals scatterplot. As a result, the Mahalanobis distances were calculated by the multiple regression analysis. Using the number of independent variables as the degrees of freedom ($n=11$), the critical chi-square value (31.26) was obtained from Tabachnick and Fidell (2001). Comparison of the Mahalanobis distances calculated by the regression analysis for each of the cases and the critical chi-square value provided evidence that none of the cases had a Mahalanobis distance value that exceeded the critical value of 31.26. However, however there were a number of cases (i.e., outliers) that approached the critical value.

Examination of the scatterplot of the residuals confirmed that there were several outliers (i.e., extreme values) in the distribution. Therefore, a possible explanation for the unexpected negative association between paternal authoritativeness and the dependent variable (i.e., cognitive hardiness) identified in the regression analysis could be the presence of these outliers. Multiple regression is a type of analysis that is highly sensitive to outliers (Pallant 2001).

However, another possible explanation for the unexpected direction of the association between paternal authoritativeness and cognitive hardiness could be attributed to the occurrence of a Type I error in the regression analysis. A Type I error occurs when the null hypothesis is incorrectly rejected (Pallant 2001, Polit 1996, Tabachnick & Fidell 2001). In other words, the hypothesis that there was no relationship between paternal authoritativeness and cognitive hardiness reported by young adult children of divorce could have been erroneously rejected based on the results of the regression analysis. In contrast, the null hypothesis was retained as a result of the correlational analysis because

these findings did not support a significant relationship between paternal authoritativeness and cognitive hardness. Therefore, the results of the regression analysis were inconsistent with the findings from the correlational analysis in regard to the null hypothesis that there was no relationship between these two variables (i.e., paternal authoritativeness and cognitive hardness). The inconsistency between the findings of the correlational and regression analyses seems to support the possibility that a Type I error occurred in the regression analysis.

The regression equation included 11 independent variables, and it is possible that the number of independent variables may have increased the risk of a Type I error since inclusion of too many potential predictor variables can reduce the utility of the regression equation (Polit 1996). One of the goals of regression analysis is to identify the smallest number of uncorrelated independent variables needed to predict a dependent variable (Tabachnick & Fidell 2001). Therefore, inclusion of a large set of independent variables in this study, almost all of which were not significantly correlated with the dependent variable but intercorrelated with each other, may have increased the risk of a Type I error.

Another assumption of regression analysis is that errors of prediction are independent of one another (Tabachnick & Fidell 2001). To test whether or not this assumption had been violated by the regression analysis, the Durbin-Watson statistic was calculated. The value of the Durbin-Watson statistic was 2.397, and fell within the indecision zone, thereby making it impossible to conclude whether autocorrelation was present.

Finally, the sample size for this study was based on 10 subjects per independent variable, and therefore the minimum sample size needed was 110 since 11 independent

variables were entered into the regression equation. The guidelines for calculating sample size requirements for multiple regression analysis varies among researchers, and a limitation of this study may have been its small sample size for multiple regression analysis.

Implications

Theory

The results of this study contribute to the two theories guiding this research; Maddi and Kobasa's (1984) hardiness theory, and Weiss's (1979) theory of the functioning of single-parent households created by divorce. First of all, the findings of this research confirm the influence of parental nurturance in the development of hardiness in offspring, regardless of the parent's gender. Maddi and Kobasa (1984) emphasized the salience of the quality of parent-child interaction and family atmosphere in the development of hardiness, as compared to other variables. Together paternal and maternal nurturance accounted for 23% of the variance in cognitive hardiness reported by young adult children of divorce. The remaining variables in the multiple regression analysis (i.e., gender, age at time of parental divorce, maternal and paternal authoritativeness, maternal and paternal authoritarianism, maternal and paternal permissiveness, and interparental conflict post divorce) accounted for another 4% of the variance in the level of cognitive hardiness in young adult children of divorce. Therefore, it appears that Maddi and Kobasa (1984) may have failed to identify other salient variables that contribute to the development of this personality strength in offspring.

In this study, paternal nurturance significantly contributed to the development of cognitive hardiness in young adult children of divorce, while the contribution of maternal

nurturance was much weaker. This finding is of particular significance given that 78% of the sample resided with their mothers after parental divorce. In addition, most of the participants lived more than half of the childhood and adolescence with their mothers since the average age at the time of parental divorce was 8 years.

The results of this research fail to provide substantial support for Weiss' (1979) theory of the functioning of single-parent households. He purported that, as a result of the decrease in social distance when a second parent is no living in the household, the level of emotional closeness in parent-child relationships increases. The association between maternal nurturance and cognitive hardness identified this study was weak (Huck et al. 1974). While offspring may have experienced increased emotional closeness in their relationship with their custodial mothers, only paternal nurturance significantly contributed to the development of cognitive hardness in the regression analysis. Furthermore, the strength of the relationship between paternal nurturance and cognitive hardness was almost twice the magnitude of the relationship identified between maternal nurturance and cognitive hardness in the correlational analysis.

The results of this study failed to provide support for the contribution of an authoritative parenting style to the development of cognitive hardness in young adult children of divorce. Based on Maddi and Kobas's theory of the development of hardness in offspring, it was expected that an authoritative parenting style would positively and significantly contribute to the development of cognitive hardness. Furthermore, Weiss' (1979) purports that single-parent households created by divorce are characterized by a maternal authoritative parenting style. While within the range of mean scores from previous studies, the mean level of maternal authoritativeness in this study

was near the lower end of the range of scores. The level of authoritativeness reported for both mothers and fathers failed to reach significance in either the correlational or regression analyses.

Practice

While the participants in this study can be considered a nonclinical sample, the results of this investigation can be useful for family practitioners working with individuals and families whose lives have been affected by the experience of divorce. Use of a resilience perspective in working with single-parent families created by divorce, households experiencing parental divorce, and offspring of divorced parents encourages therapists to expand their understanding of what constitutes normal and viable family households. As a result, clinicians can focus on identifying and promoting healthy individual and family functioning.

When both the maternal and paternal measures of nurturance were eliminated from the initial regression analysis, the predictor set of independent variables (i.e., gender, age at time of divorce, maternal permissiveness, maternal authoritativeness, maternal authoritarianism, paternal permissiveness, paternal authoritativeness, paternal authoritarianism, and interparental conflict) failed to reach significance in predicting the level of cognitive hardiness in the sample. Furthermore, only 4% of the variance in cognitive hardiness was explained by the set of variables when maternal and paternal nurturance were excluded. In contrast, 27% of the variance in the cognitive hardiness was accounted for by the initial set of predictor variables when both measures of parental nurturance were included (see Table 5). In other words, 23% of the variance in cognitive hardiness can be accounted for by parental nurturance.

These findings are not surprising given the number of previous studies have identified the contribution of parental nurturance to positive development of self-esteem in adolescents and young adults (Buri 1989, Buri et al. 1987, 1988, 1992). However, these previous investigations excluded participants whose parents were divorced or separated, had died, or were never married. Therefore, the findings of this study contribute substantially to extant literature, as the sample was comprised solely of young adult children of divorce. Of even more significance was the finding that paternal nurturance was more salient in predicting cognitive hardiness than maternal hardiness, despite the majority of the sample (78%) reporting living with a custodial mother for more than half of their childhood an adolescence.

An interesting relationship that emerged from this study was the significant influence that perceived parental nurturance has on a young adult's perception of parental authority. Regardless of the parent's gender, the results of this research provide evidence of a positive and significant association between parental nurturance and authoritativeness in the corresponding parent. In addition, the findings from this study support a significant inverse association between parental nurturance and authoritarianism. The results of this study are similar to those that Buri (1989) found that suggest that the effects of parental authority style on the development of personality strengths in young adults may be the result of their association with parental nurturance. Buri (1989) found evidence that the effects of parental authoritarianism and authoritativeness on self-esteem in young adults appears to be attributable to the direct effect of parental nurturance on parenting style. The findings of the current research are of particular significance given that previous research on parental nurturance has relied

on samples of young adults from intact families, while excluding individuals whose parents were separated or divorced, deceased, or never married to one another.

The salience of parental nurturance in contributing to a young adult's perceptions of parental authority suggests that clinicians working with parents and offspring in a context of divorce. Therefore, emphasis of the influence of perceived nurturance of both custodial and noncustodial parents on offspring should be incorporated into therapy with families whose lives have been altered as a result of marital dissolution. Family therapists may focus their clinical work on encouraging divorced parents to use an authoritative parenting style in both the custodial and noncustodial households to order to encourage healthy development and positive adjustment in their offspring. Empirical evidence supports the positive association between an authoritative parenting style and positive outcomes for offspring.

However, both the direct and indirect effects of parental nurturance in contributing to outcomes for children of divorce may be neglected by clinicians as a result of a lack of knowledge of the salience or conceptualization of this construct in a context of divorce. This study has significant implications for family therapists as a result of the effects of parental nurturance demonstrated by each parent, especially for divorced fathers, regardless of whether or not they have custody of their children.

In addition, this research supports the salience of encouraging non-custodial fathers to maintain close emotional relationships with their offspring that are characterized by a high level of nurturance. Family therapists should make every effort to (a) include biological fathers of children of divorce in their clinical work with offspring, (b) solicit support of custodial mothers in encouraging the father-child

relationship after divorce, and (c) educate both custodial and noncustodial parents in regard to the salience and operationalization of parental nurturance in the development of personality strengths in young adult children of divorce.

Future Research

Future investigations of the experience of parental divorce from a resilience perspective can further identify and expand salient variables that contribute to positive outcomes and healthy adaptation for young adult children of divorce. Given the continued prevalence of parental divorce, additional within-group studies of young adult children are needed to identify parent-child variables that encourage the development of personality strengths and healthy adjustment in a context of adversity.

Because of the number of intercorrelations between measures of parental nurturance and parental authority in this study, as well as in previous investigations, researchers could reduce the threats to the validity of findings by eliminating one of these variables from future research designs. Further investigations of parental nurturance, particularly in a context of parental divorce and living in a single-parent household, are needed. Additional research could investigate specific parenting behaviors that are perceived as nurturing by offspring, especially in a context of divorce and living in a single-parent household. Negative aspects of living in a single-parent household headed by a divorced mother that influence offspring's perception of maternal nurturance and the development of personality strengths need to be investigated further. Boundary violations, role reversal, and task overload need to be examined from the perspective of offspring in order to identify how these variables may adversely affect the development of resilience in young adult children of divorce.

Qualitative research may be especially useful in understanding parental nurturance in a context of both custodial and noncustodial households created by divorce. Furthermore, qualitative research may be useful in identifying how the types of behaviors perceived to be nurturing may change as a result of developmental stages. The types of parental behaviors assessed to be nurturing by the PNS may need to be expanded and modified in order to accurately describe the nature of the parent-child relationship in a context of living in single-parent households created by divorce, and maintaining a relationship with a noncustodial parent.

In addition, as a result of the very low Cronbach alpha reliability estimate ($\alpha = .55$), future studies that examine cognitive hardiness in a sample of young adults need to modify and norm the CHS to be more reliable and valid in a population different than the one used for the development of the instrument. Other personality constructs may be more appropriate measures of resilience among offspring of divorce than cognitive hardiness, particularly as assessed by the CHS.

Between-group studies of hardiness in samples of young adults from a variety of family structures would be useful to further explore the salience of parent-child interactions in contributing to the development of hardiness in offspring. Investigating the contribution of variables other than those explored in this study would be useful in expanding understanding of the dynamics of parent-child interactions that contribute to the development of personality strengths in young adults, particularly in a context of living in a single-parent family.

The results of this study suggest that mother-child and father-child interactions affect offspring of divorce differently. Given the continued prevalence of children and

adolescents growing up in single-parent households created by divorce, expanding understanding of the distinct roles of mothers and fathers in the development of personality strengths is of particular importance, especially for clinicians working with families of divorce.

Lastly, the sample for this investigation was not representative of young adult children of divorce in the United States. This investigation was limited to young adults attending either a 2-year community college or 4-year university. Future studies could recruit a more heterogeneous sample to include young adult children of divorce who are not currently attending either a 2-year community college or 4-year university.

Summary

This chapter has provided discussion of results and recommendations derived from an investigation of the influence of gender, age at time of parental divorce, parental nurturance, parental authority style, and post divorce interparental conflict style on the development of cognitive hardiness in young adult children of divorce. The variables that were significant were discussed, and associations were examined for strengthening and expanding future studies. Therapeutic interventions with offspring and families affected by parental divorce were suggested based on the findings of this study.

**APPENDIX A
LETTER TO PARTICIPANTS**

Dear Potential Research Participant:

In an effort to better understand how young adults think about their ability to manage their lives and cope with life stressors, a research study is being conducted on the influence of specific paternal and maternal behaviors on personality development. As a doctoral candidate in the Counselor Education Department at the University of Florida, and a staff counselor in the Counseling Center at the University of North Florida, I am inviting you to participate in this study.

Participation will require about 30 minutes. You will be asked to complete several questionnaires that ask you about your observations of specific behaviors that you noticed in your mother and father. It does not matter if your parents are divorced, as I am interested in the behaviors that you observed when you spent time with each of your biological parents. You will also be asked some questions about your attitude towards your responsibilities, activities, and coping abilities. Lastly, you will be asked to complete a demographic questionnaire that gives you an opportunity to share any additional information that you think would be helpful to me. Your identity and responses will be kept confidential to the extent provided by law.

Your participation in this study is completely voluntary. You may withdraw at any time. There are no known risks; however, if you feel that you need to speak with someone regarding issues stimulated by this survey, you may call me for a referral. No immediate benefits are anticipated although you may request the results of the study and your responses. Please be assured that no other than, beyond this project, will be made of the information that you provide.

If you have any questions about this research, you may contact me at my office (904) 273-4543 or my faculty supervisor, Dr. Ellen Amatea, at (352) 392-0731. Either of us may be contacted in writing at 1212 Norman Hall, University of Florida, 32611. Questions or concerns about research participants' rights may be directed to the UFIRB office, University of Florida, Box 11250, Gainesville, FL 32611; telephone (352) 392-0433.

If you would like to participate, please sign the statement below and include it with your completed questionnaires in the envelope that was distributed.

Sincerely,

Virginia M. Boney, Ph.D. Candidate
LMHC, LHFT, NCC; Principal Investigator

Ellen Amatea, Ph.D.
Supervisor

I have read the procedures described above. I voluntarily agree to participate in the procedure, and I have received a copy of this description.

Signature of Participant

Date

**APPENDIX B
DEMOGRAPHIC DATA SHEET**

Thank you for participating in this research study regarding the influence of maternal and paternal behaviors on young adults' attitudes towards college and responsibilities. Your responses to the survey questions that follow will help me better understand how specific parenting behaviors of mothers and fathers influence how young adults think about their ability to manage their lives and cope with life stressors. Your opinion is important; there are no right or wrong "answers" to these questions. Remember, your responses are confidential and anonymous. Please provide the demographic information requested below:

Age: _____ Gender (circle one): Male Female

Current GPA: _____
(If you are a first semester freshman, please that your high school GPA)

I am currently attending (circle one): Junior/2-year college 4-year college

Race ethnicity (circle one):

Caucasian	Black	Hispanic
Native American	Asian	Other

Highest Level of Education completed by each biological parent (circle one for each parent):

<u>Mother</u>	<u>Father</u>
Middle High School	Middle High School
High School	High School
Junior College (AA-AS)	Junior College (AA-AS)
4-year college (BA-BS)	4-year college (BA-BS)
Master's Degree or Ph.D.	Master's Degree or Ph.D.

Please circle the status that best describes your biological parents' current legal marital status:

My biological parents are:

Married to each other **Divorced/separated from each other**

Divorced/separated from each other

One of my parents is deceased Were never married to each other

Were never married to each other

If you biological parents are divorced, please answer the following questions. If your parents remain married, please skip to the last question (*) at the bottom of this page.

How old were you when your parents divorced?

Did your parents divorce at least 12 months before you entered college? Yes No

Did your mother remarry (please circle your answer)? Yes No

If your mother remarried, how old were you when she remarried?

Did your father remarry (please circle your answer)? Yes _____ No _____

If your father remarried, how old were you when she remarried?

Please mark the answer (X) that best describes which parent you lived with following your parents' divorce:

I lived most of the time with my mother, or my mother and her partner/spouse.

I lived most of the time with my father, or my father and his partner/spouse.

I lived about the same amount of time with each of my parents following their divorce.

* Please feel free to share any other information that might be helpful to me about parenting behaviors that you observed in your mother and father. I am also interested in how you think these parenting behaviors may have affected your personality development and how you cope with life stressors or challenges. You can that the back of this page if you need additional space.

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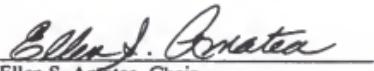
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BIOGRAPHICAL SKETCH

Virginia Montgomery Boney lives in Ponte Vedra Beach, Florida with her three daughters. She has been a counselor in the Counseling Center of the University of North Florida for the past seven years, and has a joint appointmentship to teach graduate counseling classes upon completion of her doctoral degree in Counselor Education. Her area of specialization is in Marriage and Family Therapy, as a result of her interest and commitment to strengthening families and relationships.

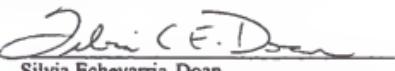
Ms. Boney is dually licensed by the State of Florida as a Marriage and Family Therapist and a Mental Health Counselor. She is also approved as a Qualified Supervisor for both professions, and is a Nationally Certified Counselor. While completing her doctoral studies, she won the Annual Student Paper Competition at the Doctoral Level sponsored by the Florida Association of Marriage and Family Therapists. She was also awarded the 2001-2002 Harold C. Riker Scholarship Award at the University of Florida.

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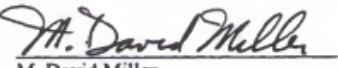
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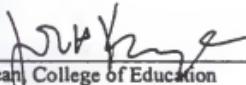
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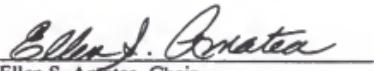
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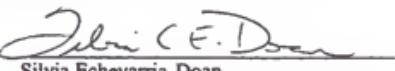
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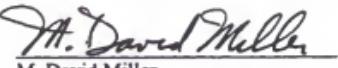
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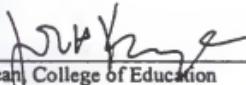
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